Procedures for Submitting Survey Samples to Domestic and Other Identifiers

Appendix E-2

Revised December 22, 2010

A. INSECTS and MITES:

Taxonomic support for insect surveys requires that samples be competently and consistently sorted, stored, screened in most cases, and submitted to the identifier.

Submission requirements for insects are:

Sorting trap samples: When a trap is serviced a critical part of the procedure is sorting. It is important to sort out the debris and non-target insect orders from the trap material. The taxonomic level of sorting will depend on the expertise available on hand and can be confirmed with the identifier.

Screening trap samples: Screening is a process of eliminating non-target families, genera, or "look-a-likes" of the species being surveyed for. Consult the screening aids on the CAPS website for screening aids for particular groups. When in doubt however, forward the specimens to the identifier/taxonomist. The use of these aids should be coupled with training from identifiers and/or experienced screeners before their use. These can be found at: http://caps.ceris.purdue.edu/node/34

Storing samples: Where appropriate, samples can be stored indefinitely in alcohol. However, samples of dried insects such as those in sticky traps may decompose over time if not kept in a cool location such as a refrigerator or freezer. If insect samples have decomposed, do not submit them for identification.

Packaging and Shipping: Ensure specimens are dead prior to shipping. This can be accomplished by placing them in a vial of alcohol or place the dry specimens in the freezer for at least 1day. The following are a few tips on sorting, packaging and shipping liquids, sticky traps and dry samples:

Liquids:

Factors such as arthropod group, their life-stage and the means they were collected determine the way the specimens are handled, preserved and shipped to the identifier. In general mites, insect larvae, soft-bodied and hard-bodied adult insects can be transferred to vials of 75-90% Ethanol (ETOH), or an equivalent such as isopropyl alcohol. At times, Lindgren funnel trap samples with bark beetles may have rainwater in them. To prevent later decay, drain off all the liquid and replace with alcohol. For more guidance on these samples, please follow the procedures in the newly revised **Guidelines for Submitting Wood Borer and Bark Beetle (WBBB) Specimens for Identification**.

Vials used to ship samples should contain samples from a single trap and a printed or hand-written label with the associated collection number that is also found in the top right corner of Form 391. Please make sure to use a writing utensil that isn't alcohol soluble, such as a micron pen or a pencil. It is very important not to mix samples from multiple

traps in a single vial so as to preserve the locality association data. Vials can be returned to field personnel upon request.

If sending specimens in alcohol is an issue with the mail or freight forwarder, the majority of liquid can be decanted off from the vial and then sealed tightly in the container just prior to shipping. Notify the identifier that the vials will need to have alcohol added back to them as soon as they are received. During the brief time of shipping, the specimens should not dry out if the vial is properly sealed.

Sticky trap samples:

Adult Lepidoptera, because of their fragile appendages, scales on wings, etc. require special handling and shipping techniques. Lepidoptera specimens in traps should not be manipulated or removed for preliminary screening unless expertise is available. Traps can be folded, with stickum-glue on the inside, but only without the sticky surfaces touching, and secured loosely with a rubber band for shipping. Inserting a few styrofoam peanuts on trap surfaces without insects will cushion and prevent the two sticky surfaces from sticking during shipment to taxonomists (see Figure 1). Also DO NOT simply fold traps flat or cover traps with transparent wrap (or other material), as this will guarantee specimens will be seriously damaged or pulled apart – making identification difficult or impossible.

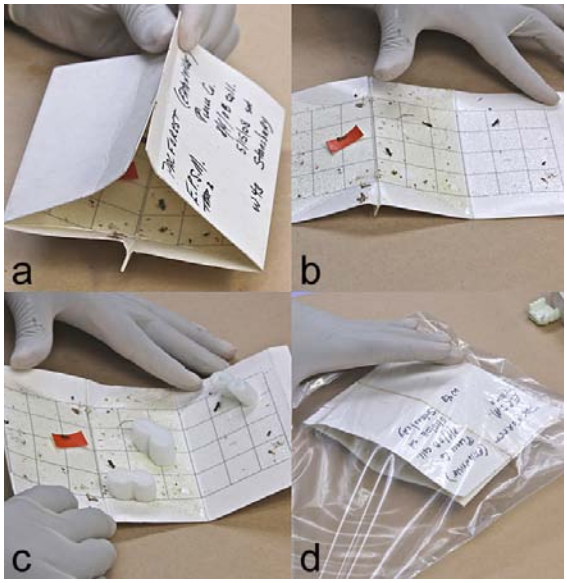

Figure 1. Recommended packing method for shipment of sticky traps: a & b) open and unfold trap; c) place 2-3 packing peanuts in areas of trap with no moths; d) fold trap, secure with rubber band, and place in plastic bag.

An alternative to this method is to cut out the area of the trap with the suspect pest and pin it securely to the foam bottom of a tray with a lid. Make sure there is some room around the specimen for pinning and future manipulation. For larger numbers of traps, placing several foam peanuts between sticky surfaces (arranged around suspect specimens) can prevent sticky surfaces from making contact when packing multiple folded-traps for shipment. DO NOT simply fold traps flat or cover traps with transparent wrap (or other material), as this will guarantee specimens will be seriously damaged or pulled apart – making identification difficult or impossible.

Dry specimens:

Some collecting methods produce dry material that is very fragile. (NOTE: Bark beetle/wood borer samples collected in Lindgren funnel traps should not be sent dry. Follow the guidelines listed in that specific protocol linked under “Liquids” above). Dry

samples can be shipped in vials or glassine envelopes, such as the ones that can be purchased here: http://www.bioquip.com/Search/default.asp. As with the alcohol samples, make sure the collection label is associated with the sample at all times. This method is usually used for larger insects and its downside is the higher chance of breakage during shipping. Additionally, dry samples are often covered in debris and sometimes difficult to identify.

Be sure that the samples are adequately packed for shipment to ensure safe transit to the identifier. If a soft envelope is used, it should be wrapped in shipping bubble sheets; if a rigid cardboard box is used, pack it in such a way that the samples are restricted from moving in the container. Please include the accompanying documentation and notify the identifier prior to shipping. Remember to inform the identifier that samples are on the way, giving the approximate number and to include your contact information.

Documentation: Each trap sample/vial should have accompanying documentation along with it in the form of a completed PPQ form 391 *Specimens for Determination.* The form is fillable electronically and can be found here:
http://cals-cf.calsnet.arizona.edu/azpdn/labs/submission/PPQ_Form_391.pdf

It is good practice to keep a partially filled electronic copy of this form on your computer with your address and other information filled out in the interest of saving time. Indicate the name of the person making any tentative identifications prior to sending to an identifier. Please make sure all fields that apply are filled out and the bottom field (block 24: Determination and Notes) is left blank to be completed by the identifier. Include the trap type, lure used, and trap number on the form. Also, include the phone number and/or e-mail address of the submitter. Other documentation in the form of notes, images, etc. can be sent along with this if it useful to the determination. It is important that there be a way to cross-reference the sample/vial with the accompanying form. This can be done with a label with the "Collection Number" in the vial or written on the envelope, etc.

B. PLANT SAMPLES for PLANT PATHOLOGY ANALYSIS

***Sampling*:** Please submit adequate amounts of suspect leaf material when possible. This helps ensure that there is sufficient material if downstream diagnostic techniques are required. Twelve or more leaves per sample are desired.

Storing: Refrigerate samples while awaiting shipment to the diagnostic laboratory. Place leaves **without paper towel** in a sealed and labeled ziplock bag.

Documentation: Each **sample** should be documented on, and accompanied by its own completed PPQ Form 391 *Specimens for Determination.* It is good practice to keep a partially filled electronic copy of this form on your computer with your address and other information filled out in the interest of saving time. Please make sure all fields that apply are filled out and the bottom field (block 24: Determination and Notes) is left blank to be completed by the Identifier. Include the phone number and/or e-mail address of the submitter. Other documentation in the form of notes, images, etc. can be sent along with

this if it useful to the determination. It is important that there be a way to cross-reference the sample with the accompanying form. For example, write the "Collection Number" both on the Form 391 and on the sample bag.

Packing: To provide extra insurance against accidental release during shipping, specimens should be double-bagged – i.e. first place the specimen in a self-locking plastic bag and then place that bag within a second self-locking plastic bag. ******The Form 391 should not be placed in the bag holding the sample! Rather, it should be placed inside the outer bag******

Place double-bagged samples in a sturdy cardboard box or heavy styrofoam container so that the samples are not damaged during shipping and handling. Ideally, samples should be packed with freezer blocks or wet ice to maintain their integrity during the shipping process. Thoroughly seal all seams on the container with shipping tape.

Shipping: The Identifier Laboratory should be contacted prior to forwarding samples. It is helpful to know how many samples are being forwarded, what types of samples they are (e.g. SOD-suspect Camellia leaves), when the samples will be shipped, and the package tracking number.

Label the shipping box as 'URGENT' and send via overnight express courier (FedEx, UPS, Airborne, DHL, etc) to the appropriate Identifier.

C. MOLLUSKS

Specimen Handling: When collecting live samples, specimens should be placed directly into water making sure that no air bubble remains inside. Seal for 24 hours or until drowned, then transfer to 70 percent ethyl alcohol. Replace the water with a 70-80 percent alcohol solution after the snail has extended from the shell or when the slug is fully extended. Label the container with the appropriate information. After handling slug samples, hands should be washed in hot soapy water, and rinsed in alcohol or a standard disinfectant.

Labeling & Documenting Samples: Collection information is vital and should be completed immediately after a collection is made. Write directly on the collection container or on a paper label placed inside the vial using a pencil or with alcohol-proof ink. Complete PPQ form 391, *Specimens for Determination*. Write the date, collector's name, collector's contact information, and location including any transect and plot numbers. If multiple vial samples are collected from a location, assign individual sample numbers. When transferring the specimens to alcohol, ensure the label accompanies the sample.

Sample Submission Procedures:

Sort samples: As such, it is important to sort out the debris and non-target pests. The taxonomic level of sorting will depend on the expertise available on hand and can be confirmed with the identifier.

Screen Target Pests: Utilize local resources. Some states may have taxonomic support, access local training aids or identification guides.

Packaging and Shipping: Ensure specimens are dead prior to shipping. Use a sturdy cardboard box or heavy styrofoam container so that the samples are not damaged during shipping and handling. When shipping large vials, carefully wrap vials with adequate packing material so that if breakage occurs during transit, the alcohol will not leak outside the shipping box. It is recommended that vials be wrapped in zip-type bags.

Identification: The Identifier should be contacted prior to forwarding samples. It is helpful to know how many samples are being forwarded and when the samples will be shipped.

Reporting results are "positive" or "negative." Identifications usually take 2-3 weeks. However, identification time may take longer based on identifier's current workload or the volume of samples submit.