

Insect Specimens Collection and Preparation

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The key to effective control of any pest or disease is proper identification. When identification is needed, sample specimens can be sent to the Cooperative Extension entomologist at a Land Grant University, or other professional entomologists with knowledge of turf insects.

Except for moths and butterflies, the following is suggested when submitting immature and adult stages of insects to an entomologist for identification.

1. Collect 5 to 10 live specimens.
2. Immediately after collection, boil a small quantity of water (a cup of water in a microwave oven is satisfactory) and drop in the specimens after the water reaches the boiling temperature. Wait 30 seconds and pour off the water.
3. Drop the "blanched" specimens into a leak-proof vial of 60 to 80 percent ethyl alcohol. Vodka or denatured alcohol used as shellac thinner are sources of ethyl alcohol. **DO NOT USE ISOPROPYL (rubbing) ALCOHOL.**
4. Record the date, city, state and habitat location (e.g., leaves, thatch, soil, etc.) where the specimens were collected and tape on the outside of the vial and/or written **IN LEAD PENCIL** in a small piece of paper and place inside the vial. (Ballpoint pen ink will dissolve in the alcohol.)
5. Include a note with your name, address and phone number, plus any additional information that might be helpful to the specialist.
6. Ship the vial in a crush-proof container. Moths such as cutworms or sod webworms and butterflies must be sent **DRY** and require special provisions to prevent destruction in shipping. Directions for such shipments should be obtained from the person or agency to whom the specimens are to be sent.

Developing a Collection

When correctly identified, insect specimens can be assembled into a useful collection for future reference and training. If properly preserved and sealed, the specimens in a collection last indefinitely.

Killing and Preservation. The larvae of insects are soft-bodied and require special preparation before long-term preservation. Two methods may be used.

1. Live larvae are killed in a solution of one part 95 percent ethyl alcohol (shellac thinner) and one part xylene. Both ingredients are available from scientific supply companies. After 24 hours, transfer the specimens to a glass screw-top vial containing 75 percent ethyl alcohol.
2. OR, live larvae are dropped into boiling water for 30-60 seconds. The specimens are then transferred to a glass screw-top vial containing 75 percent ethyl alcohol for permanent preservation. Replace the alcohol with clean 75 percent ethyl alcohol within 7 to 10 days. Living adult beetles such as Japanese beetle, billbugs, masked chafers, etc., may be killed by direct emersion into 75 percent ethyl alcohol for at least 24 hours and transferred to clean 75 percent ethyl alcohol. Both larvae and adults of one species can be stored in one vial. Caps for the screw-top vials used for permanent storage should have poly-seal inserts to prevent evaporation of the alcohol.

Self-adhesive labels bearing the common name of the insect should be placed on the outside of each vial. Be careful. Any label placed inside the vial must be printed using permanent, water-proof black India ink. Other inks will dissolve in the alcohol.

Display. Vials with specimens can be displayed in many ways. A wood 2" x 4" with evenly spaced holes of the same diameter as the vials works well.