



## Bug-Wise

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**Submitting Insect Samples for Identification:** Proper identification of the pest one is dealing with is the most important step in determining how to control it. Although there are many helpful books and internet sources that can aid in insect identification, it is sometimes necessary to send insects to an entomologist who has access to a good microscope and access to the necessary ID keys and other resources.

Insect samples are still processed free of charge at the Insect Diagnostic Lab here at Mississippi State. Non-insects such as spiders and ticks can also be submitted to this lab. However, the quality of the identification strongly depends on the condition of the sample and the quality and detail of the supporting information that is submitted with the sample. Following are some key points regarding the submission of insect identification samples.

- Insect identification samples should be mailed directly to: **Insect Identification, Box 9775, Mississippi State, MS 39762-9775**. Do not mail insect samples to Extension Plant Clinics or the Plant Disease Diagnostics Lab. There is a charge for plant disease diagnostics, and sending insect samples to the plant disease lab results in slowed response time and increased sample deterioration. However, if you are not sure whether the problem is disease or insect related, then submit to the Plant Disease Diagnostics lab, because sample deterioration is usually a bigger problem for disease samples. In some situations one may wish to send samples to each lab.
- Package samples properly. Samples that do not arrive in good condition often cannot be identified.
  - Soft-bodied insects like caterpillars, aphids, etc must be placed in alcohol (preferably ethyl alcohol, but isopropyl will work) in a small leak proof container. Then pack the container with padding in a crush-proof box. This is also the best way to send most other insects, including hard-bodied insects like beetles, crickets, etc.
  - Hard-bodied insects like beetles can be wrapped in paper towels and placed inside a small, crush-proof container so that they cannot move around (shipping in alcohol is better, but this method usually works). Dead insects that can jostle around in their shipping container usually arrive without legs and antennae, which are very important in insect identification.
  - Insect infested plant samples should be wrapped in dry paper towels, placed in a plastic bag and packed in a crush-proof container. It is best to send these types of samples early in the week, so that they do not sit over a weekend.
- Provide adequate information about the sample! This is a very important part of getting a good identification and recommendation. When possible, insect samples should be accompanied by Form 205, Plant Disease Diagnostics and Insect Identification Form. Regardless of whether this form is available or not, be sure to include the following information:

- Give the name, address and phone number of person submitting the sample and the date that the sample was collected.
- Give specific details on where the sample was found. If it was found on a plant be sure to identify the plant as accurately as possible. Knowing the host plant is extremely helpful in identifying most insects to species and some insects cannot be identified without knowing the host. Be as specific as possible. 'Nuttall oak' is much more helpful than 'oak'. If the insect was found in some other location than on a plant, provide as much detail as possible.
- If the insect or spider bit or stung someone, be sure to indicate this.
- Describe the damage that the insect is causing. If the pest is attacking a plant, be sure to indicate what parts of the plant are being attacked, also indicate the size or stage of the plants, and the extent of the damage.
- If you want information on control, in addition to an identification, be sure to say so, and **be sure to indicate whether the control information is for a homeowner situation or a commercial operation.** Control options for these two situations vary greatly.
- Provide any additional information that you feel may be helpful in identifying the insect or in providing recommendations for control.

**Distance Diagnostics:** What about submitting digital photos of the pest by e-mail for distance diagnostics? Sometimes this works and sometimes it doesn't. When it works, it saves lots of time. It works best for large, conspicuous insects and for pests of common crops and ornamentals. Many of the more common insect pests are relatively easy to identify from a good picture. However, identification of many insects requires microscopic examination of very detailed characters that just can't be seen in a picture.

Still, digital distance diagnostics is worth a try, especially in time sensitive situations. Just be sure to save the insect or spider in alcohol, as described above, so that it can be physically submitted if the distance diagnosis doesn't work.

Take the best pictures you can with the equipment you have available. Get as close to the insect as possible (as much magnification as possible) while still showing the whole insect in good focus. Also provide some size reference, either from an object included in the photo or by stating the length of the insect. The single best aspect is to take a side view from about 30 degrees above the surface on which the insect is resting, but try to include several shots from several angles. When possible, also include a picture of the damage, or the insect as it is causing the damage, and any other pictures or views that you feel may be helpful.

Be sure to include all the necessary information that is needed when submitting physical samples. This supplemental information becomes even more important for distance identifications.

**E-mail digital images and the information about the sample to: [blayton@entomology.msstate.edu](mailto:blayton@entomology.msstate.edu).**