



Bug-Wise

No. 1

January 31, 2011

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Insect Identification: Got an insect or spider you'd like to get identified and/or get information on how to control it? Insect identification samples are processed free of charge at the Insect Diagnostic Lab here at Mississippi State. **Send samples to: Blake Layton, Dept. of Entomology, Box 9775, Mississippi State, MS 39762-9775.**

The quality of the identification and control recommendation depends on the condition of the sample and the detail of the supporting information that is submitted with the sample. We sometimes get samples that were simply stuck in a plastic bag, put in an envelope, and mailed. These usually get so broken or smashed in the mail that they are impossible to identify. Take time to package the sample properly.

- Soft-bodied insects like caterpillars, aphids, etc must be placed in alcohol (preferably ethyl alcohol, but isopropyl will work, as will vinegar) 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 such as adult beetles, grasshoppers, wasps, or true bugs 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). Dry insects that can jostle around in their shipping container usually arrive without legs and antennae, and legs and antennae are very important in insect identification.

We also get samples that consist only of the insect, with no information on where, or why, it was collected. It is much more difficult to identify insects when the host is not known, and even when we can identify the critter, we can't provide control information without knowing the details of the situation. Is this a homeowner or commercial situation? Who is submitting the sample and when did they collect it? Is this pest on a food crop or a non-food crop? Is this pest problem indoors or outdoors? Was this the only one or were there large numbers? What kind of damage were they doing?

When possible, insect samples should be accompanied by Form 205, Plant Disease Diagnostics and Insect Identification Form. If you do not have this form available just enclose a brief note providing these details: who, what, when, where, and why. Having this information makes it much easier for us to identify the sample and provide useful control recommendations. When possible, try to send in several specimens, especially when sending small insects and mites. Sometimes a key identification feature is hard to see on one specimen and easy to see on another.

Can You Make Identifications from Digital Photos?: If you can take good close-up digital pictures of the specimen and e-mail them, we can sometimes identify insects this way. **Send to blayton@entomology.msstate.edu.** Photo identification works about half of the time, so be sure to preserve the specimen in case we need to see the actual creature. Photo IDs work best for larger insects. For small insects, say less than ½ inch, or insects damaging commercial crops it is usually best to go ahead and send a physical sample.

Try to include several pictures, taken from different angles, and include information on the size of the insect. When possible take the critter out of the container, or at least take the lid off, before photographing. Pictures taken through a glass jar or plastic bag usually do not turn out very well. Also be sure to include the "who, what, when, where, and why" information that you would include with a physical sample. This information is even more important when trying to identify insects from photos.

Summary of Insect Identification Samples Processed in 2010: Last year we received a total of 232 physical samples and a similar number of digital photo ID requests. Samples are submitted for many different reasons. In some cases someone found an interesting insect they had never seen before and was just curious as to what it was. In other cases commercial producers needed to know what species of insect pest was damaging their crop and the best methods of controlling that pest. Following are examples of some of the more common insects, or groups of insects, that are sent in for identification and some of the reasons these samples are submitted.

Termites: Finding large numbers of termite swarmers inside a building is a sure sign the building is infested with termites and needs to be treated, but termite treatments are expensive and ant swarmers and other small insects are often mistaken for termite swarmers. Samples are often submitted to find out “Are these termites?” Usually they are termites, but sometimes we get to tell the homeowner they have ants instead, resulting in hundreds of dollars in savings. When the identification is termites, just having confirmation that it really is worth spending all that money to have the building treated can help avoid thousands of dollars in damage repairs. It is also helpful to know which species of termite you have. Are they eastern subterranean termites or are they non-native Formosan termites?

Ants: Of the 175+ species of ants we have in the state, fewer than a dozen are common indoor pest ants. Treatment of indoor pest ants is much more effective if you know which species you are trying to control. Many ant samples are submitted each year by homeowners and pest control companies just to find out which species of ant they have and how to go about treating for it. Little black ants are easy to control, but Argentine ants are more challenging.

Spiders: “Is this spider venomous?” This is the most common question people have when they send in a spider sample. It takes a lot of time, effort, and expense to aggressively treat for brown recluses or brown widows, but it must be done if your house is heavily infested with one of these venomous species. On the other hand, you may be less intensive about treating for non-venomous species such as spitting spiders or common house spiders, species that, respectively, are often mistaken for brown recluses or brown widows.

Insects Found Inside the Home: Finding large numbers of small insects on a windowsill or other location inside the home is usually an indication there is a bug problem somewhere in the house. But what kind and where? Are these insects stored food pests, clothing pests, wood-boring insects, or some other type of pest? Getting the insects identified can help you know where to look for the infestation and how to treat it when you find it.

Insect Pests of Commercial Nursery Crops: Commercial horticultural crops are attacked by a large number of pests. Many are small creatures, such as aphids, scales, spider mites, thrips, and whiteflies. Sometimes it is not enough to know you are dealing with aphids or whiteflies; you need to know which species of aphid or whitefly. For example, silverleaf whiteflies will infest more species of plants and are considerably more difficult to control than citrus whiteflies. Or, could these be chilli thrips rather than flower thrips?

Frass: Sometimes you can't find an insect, but you find accumulations of powdery or grainy frass (the droppings and/or chewings from insects) on a windowsill or counter top. Samples of such materials are occasionally submitted. Sometimes these samples turn out to be non insect-related things such as loose insulation materials, grits, or rodent gnawings. But we can sometimes determine which insects are causing the frass by clues that can be seen under the microscope, things such as shape of the droppings or mandibles, legs or other insect parts that are present. For example drywood termite droppings are distinctively shaped and easy to identify under magnification and the frass acrobat ants make when they bore into wood or foam insulation usually contains parts of dead acrobat ants.

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