

# MuseumPests.net

A Product of the Integrated Pest Management Working Group

## Suggested Field List for Pest Observation Databases

Following is an annotated list of fields intended as a reference for individuals creating new pest observation databases. Considerable thought has gone into the creation of this list based on the experience of members of the IPM Working Group. From the beginning, the goal has been to identify those fields that are most important for tracking pest observation data. The fields presented herein have been divided into four categories: mandatory, suggested, optional and not recommended. It must be remembered that every institution has different needs and goals, so as you design your database, your task will be to select the fields that fit your institution's needs. There may also be fields not found on this list that you will want to include, but please remember that by keeping your database simple, you will increase its usability.

### Mandatory

#### *General Trap Location (e.g., building or zone)*

Depending on the institution, it may be desirable to have more than one general trap location field, such as building and floor. To decide, try to imagine how the data are likely to be queried. If you anticipate querying by building and floor separately, put them in different fields.

#### *Specific Trap Location (e.g., room or location within a room)*

#### *Trap Number*

Strictly speaking, the ID number is assigned to the location where the trap is set and not to the trap itself. Often, this is simply a matter of semantics, but it becomes important when considering that trap locations within a room may be reconfigured at any time. If the ID refers to the trap and not to the location, past information may be lost or misinterpreted.

#### *Inspection Date*

#### *Common Name of Insect (or Arthropod)*

This field is important because it's the primary ID used by many individuals. Keep in mind that common names vary from place to place and that there are varying degrees of specificity (e.g., 'moth' vs. 'clothes moth' and 'webbing-clothes moth'). Use of an authority file or lookup list should help to restrict names to those commonly used in your area.

#### *Scientific Name of Insect (or Arthropod)*

While the scientific name is the ultimate identification of the pest, there is the same problem of specificity as with common name (e.g., 'Dermestid' vs. '*Dermestes maculatus*'). Again, this can be overcome by using an authority file to guarantee uniformity in the application of scientific names. Having the scientific name entered automatically when the user selects a common name will serve as an aid to people who

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may not know the scientific names. In addition, use of an authority file will assist novice staff members.

*Life Stage*

*Number of Insects Observed*

*Pest Association or Ecosystem (e.g., damp, decay, mold, moisture, external, warmth, drains, etc.)*

The purpose of this field is to allow the user to locate problems with the building's infrastructure. For example, if you are regularly seeing insects associated with dampness in a particular room, you need to have the maintenance department find the water problem and fix it. Thus, the presence of pests provides not only the impetus for fixing the building, but the means of locating the problem as well. To make data entry easier, use a lookup list to automatically fill this field when the identification of the pest is entered.

*Risk Factor (e.g., pest / nuisance / predator / environmental indicator or high / moderate / low / none)*

This field can be used in either of two ways. The first way is simply to flag each pest type by their risk level (i.e., extremely damaging museum pest). The other use is to note what type of risk each pest species poses. The various species normally identified as pests are those that cause primary damage to objects. However, there are other species that also contribute to pest problems. For example, many species of insects do not damage museum objects directly, but can provide a source of food for those species that do cause damage. Also as noted above, some species serve as environmental indicators of certain undesirable conditions within the building. You should use a lookup list to automatically fill this field when the identification of the pest is entered, thereby speeding up data entry.

## **Suggested**

*Room Function (e.g., collection storage, office, and restaurant)*

*Location Details (e.g., near window or water drain)*

Note that care must be taken to avoid ambiguity when defining standards for this field. For example, the phrase "near to" can be ambiguous since the term "near" is interpreted differently by individuals. In this case, it would be more useful to use a "less than" distance (e.g. < 2m). When defining these parameters, a decision first needs to be made as to what the boundary of influence is. At what distance from a window/water pipe does the risk it poses become insignificant?

*Trap Placement Date*

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While it's nice to have this information, it can usually be obtained from the previous inspection date for particular trap location.

## Optional

*Environmental Conditions (e.g., temperature, RH)*

*Sex*

It's tempting to include this information but often it is extremely difficult for non-specialists to accurately sex insects. Furthermore, it likely won't make any difference to your IPM strategy. The goal is to keep all pests out of the museum.

*Pest Status (e.g., live, dead)*  
*Remarks*

Record information that does not "fit" into the other fields. For example, the amount of dust in a trap could be recorded simply to document housekeeping problems. For untrained users, a list of suggested material for the inclusion in the remarks field would be desirable.

## Not Recommended

*Action Taken*

While it is tempting to record this information in the pest observation database, there are problems. Basically, the difficulty lies in the fact that there is too much redundancy and the data are very hard to retrieve. The perceived advantage gained by correlating observations against treatments is lost when one considers (1) that not all observations result in a treatment (2) many observations may result in a single treatment, or (3) treatments may not be associated with an observation at all. A separate repository for treatment history and details ought to be maintained. The two files can be cross-referenced on as-needed basis.

*Events (e.g., specimens brought into the museum or catered event)*

Again, this is important information but is best stored in a separate file simply because it does not directly relate to observation of pests in traps. For example, there may be several catered events during the one trap inspection interval. How would these be linked? It's better to store the information in another file and correlate them manually when needed.