

Methods for Mushroom Collecting

Preparing voucher specimens of mushrooms involves removing the fungus from the substrate, usually with a knife, taking notes on characters that get lost on drying, and drying the specimen to preserve it for later microscopic study and as a reference. Collect specimens in paper bags or waxpaper, not plastic. Sheets of waxpaper can be rolled into a tube and the ends twisted to close the tube; these are especially useful for fleshy mushrooms. Plastic bags provide no support for the specimen and can promote rotting. Small mushrooms can be collected in plastic or glass vials or metal containers with tight lids that will keep them moist and undamaged until they are studied. Protect the mushrooms in a basket or box until you bring them back to home or lab to be processed.

For tough specimens like shelf fungi and puffballs, collecting is not complex as most characters are not lost on drying. For very large specimens, a part may be sufficient to identify it.

Be sure to note what the mushroom is growing with. Some on soil are mycorrhizal and they may have specific host trees. Make a note when you collect it and put it in the bag with the specimen.

For fleshy fungi, we use a standard description sheet and a color guide. Photos can substitute for the color guide. Split one mushroom lengthwise, then make notes on size, colors and color changes inside and out, smell, and taste. Chew a pea-size bit of the cap, but not if it is an amanita; these can be poisonous. Always spit it out after tasting it. Also make notes on surfaces. Is the cap and/or stem sticky or dry, shiny or dull, etc.? Are there veils present, i.e., a ring on the stem, a basal cup, (this may have to be dug out of the soil), or patches (veil remnants) on the cap? What is the veil like, i.e., is it membranous or like a cobweb? What are the gills or tubes like? Are the edges the same as the gill or tube side? How are they arranged? Be sure to collect both young and mature specimens if they are available. Photos help a great deal for both colors and surface details.

Make a spore print on white paper. Cut off a cap or a part of one, and set it with gills or tubes down. Put a jar or cup over it so it will not dry out. It may take 12 hours or more to get a good spore print. Fold the spore print paper after the print dries to protect it. The spore print color is used in identifying and the mature spores are examined in the microscope.

Dry the specimen in a cool oven. A herbarium drier or food dehydrator is ideal. In a pinch an oven can be used, but the door should be left ajar so the moisture can escape. You want to dry, not cook, the mushrooms. Temperature should be about 95-100°F. The mushroom is dry when it is crisp. This may take a day or more with large specimens. If you want to keep the specimen long term, they should be frozen after drying to eliminate insect larvae. We freeze at -20°F

for 5 days in plastic bags so the specimens do not become wet from condensation when removed from the freezer. Specimens can be stored in zip lock plastic bags or other containers. They should be stored in closed containers to protect them from insects.

We are interested in specimens for the herbarium to help document what grows in Minnesota. The Fungal Herbarium website <http://www.bellmuseum.umn.edu/> can provide lists by county or management area for mushrooms and other fungi.