



### A Primer on Mushroom Preservation

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Excerpted from the authors' forthcoming book The Beginner's Guide to Mushrooms: Everything You Need to Know, from Foraging to Cultivating (Quarry Books, 2020)

all is the season of abundance.
Historically, fruits and vegetables were socked away for leaner times ahead. Wild and cultivated mushrooms preserve well, in most cases, and can be enjoyed throughout the year. Our primer below has easy-to-follow techniques and suggestions on which method is best for many kinds of mushrooms.

# Processing and preservation

Most wild and cultivated mushrooms can be kept for about one week in the refrigerator. Never store in plastic bags. Mushrooms should be stored in paper or simply place a clean cotton towel in the bottom of the crisper drawer and add your mushrooms, covering with

Pickled Hen of the Woods, as described in the glorious Untamed Mushrooms: From Field to Table (2018) by Michael Karns, Dennis Becker, and Lisa Golden Schroeder. For a review, see FUNGI 12:2. Photo courtesy Minnesota Historical Society Press. another cotton towel. Dry towels will wick away any moisture and prevent molding. Never place wet mushrooms in the fridge; air dry on a cotton towel first. If you have more than you can use up in a few days, then consider preserving them for later use. Drying is an excellent way to preserve (and display) your mushrooms for later usage and some

dried species are as good as or better than fresh. Freezing is also suitable for many kinds of mushrooms. Both techniques are simple and explained in the paragraphs below.

Not all mushrooms preserve well by any means, however, and really should be used up while fresh. Matsutake mushrooms lose their wonderful aroma if dried; freezing preserves this somewhat, but the crisp texture is mostly lost. Chicken of the Woods, or Sulfur Shelf, loses all texture, aroma, and color when preserved by any means. Shaggy Manes and Inky Caps lose everything and turn to a bowl of ink if not used up soon. They have very powerful enzymes that cause the caps to pretty much digest themselves. If you must store any Inky Cap mushrooms overnight, try this trick: store them submerged in a bowl of water in the fridge. They may last for a few days as long as all air is excluded from them (which suppresses the enzyme activity). And don't worry about them becoming water-logged before cooking, as Inkies are mostly water anyway.

#### Cleaning mushrooms

Mushrooms should never be soaked. Mushrooms that are very far gone or absolutely filthy should be left in the woods. Most mushrooms will be damaged or ruined in water. Some very sturdy mushrooms (e.g., chanterelles, young morels) can survive washing but most







others will be damaged or destroyed.

Clean mushrooms begin in the forest. When picking, take extra time to remove debris from edibles, trim off dirty parts of stems and bad spots, and place in a clean basket. And keep it clean. Do not pile dirty mushrooms on top of clean ones (this is especially important for gilled mushrooms). Take two baskets if you need to. If dirt and grit gets into the gills of mushrooms, it is impossible to clean. I personally have zero tolerance for crunching grit in my food. It should go without saying that mushrooms riddled with holes from bugs should be tossed out. A soft brush in the kitchen or on your mushroom knife is invaluable; a damp cloth in the kitchen can wipe away any last traces of dust or dirt. If you absolutely must wash a dirty mushroom, air dry on a towel for a few hours before storing or cooking. Wet mushrooms mold in the fridge and do not sauté in the skillet, they boil.

#### Freezing mushrooms

Freezing is a great way to store many kinds of mushrooms, but there are some steps to follow to ensure the final product is the highest quality possible. All mushrooms to be preserved should be fresh and firm. A good way to be sure your mushrooms will have good flavor and texture is to cook them first. They do not need to be cooked thoroughly, but they should be at least cooked partially. Cooking deactivates enzymes and preserves texture and flavor in mushrooms, just as vegetables like corn or beans must be blanched first to prevent from degrading in quality. The process is the same for all mushroom species to be frozen, simply slice and blanch in boiling water for a

minute or lightly sauté. I often do this with mushrooms as soon as I get home, saving the sautéed mushrooms in a big bowl until dinner time. All I need to do next is throw a large handful or two into the dish I'm preparing, then the rest can

go into a small Ziploc and straight into the freezer.

For freezing large batches of mushrooms, slice and arrange them separately (not touching) on a baking sheet lined with waxed or parchment

Handy guide to the best way to preserve your wild or cultivated mushrooms, where recommended (++), mediocre (+), and not recommended () are the opinions of the authors.

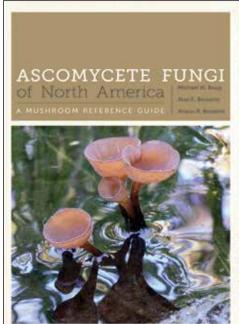
	Fresh	Dried	Frozen	Pickled
Agaricus spp., Field Mushrooms	++		+	+
Black Trumpets	++	++		+
Blewits	++		+	+
Boletes	++	++	+	+
Candy Caps		++		
Chanterelles	++		+	+
Chanterelles, Yellow-foot	+	+	+	+
Chicken of the Woods, Sulfur Shelf	++			
Hedgehog Mushrooms	++		+	+
Hen of the Woods, Maitake	++	++	+	++
Honey Mushrooms	+			+
Huitlacoche, Corn Smut	++		++	
Lobster Mushrooms	++		+	
Matsutake, Pine Mushrooms	++			
Milk Mushrooms	++	+	+	++
Morels	++	++	+	
Oyster Mushrooms	++		+	+
Puffballs	+			
Shaggy Manes, Ink Caps	+			
Shiitake	++	++	++	+
Tooth Fungi, Lion's Mane, Hawk's Wing	++			
Wine Caps	++		+	



paper. Baking sheets can be stacked in the freezer overnight. Once mushrooms are frozen, they can be placed in freezer bags. Freezing them separately like this will allow them to hold their shape better and prevent from becoming a single frozen mass. When ready to cook, simply select a portion and replace bag in the freezer. Allow frozen mushrooms to thaw and warm them back up or add them to a dish that is already cooking. Frozen mushrooms retain much of their flavor and texture and can be used just as fresh mushrooms would be.

#### Drying mushrooms

Drying is the preferred method of storage for most mushrooms, but it works better for some than others. Morels, Candy Caps, and Shiitake mushrooms dry extremely well and can be kept for years. Oyster mushrooms and Wine Caps dry very readily, but the texture of the reconstituted product can be a little soft for most people. Chanterelles dry nicely but rehydrate very tough and leathery. In cases where the dried mushroom texture may not reconstitute well, consider grinding dried mushrooms into a powder. Mushroom powders often retain flavors pretty well and can be flavorful additions to flour when dredging tempura vegetables, meats and fish before frying or baking. Mushroom powders can be used as flavorful thickeners instead of flour or cornstarch when making sauces and gravies. If you live in the Midwest and are addled with hundreds of Half-free Morels, mushroom powders are a good way to utilize those giant stems. A cheap spice mill or coffee grinder works great for pulverizing dried mushrooms into powder.





### ASCOMYCETE FUNGI OF NORTH AMERICA

A Mushroom Reference Guide

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AND ARLEEN R. BESSETTE

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An electric dehydrator is not absolutely essential for drying mushrooms. But it works best, doesn't cost much, and once you have one you will find uses for it throughout the year drying herbs, fruits, vegetables, making fruit leathers and jerky, even for preserving your scientific mushroom specimens. (Yes, it's safe to dehydrate toxic species on the same dryer as for food, just don't eat the toxic mushrooms. It's best not to mix toxic and edible species on the dryer at the same time.) Mushrooms can be air dried with a fan, hung up to dry with needle and thread, or sun dried on screens outside. None of these methods work as quickly or as well as a dehydrator. Most places in North America and Europe have a good deal of humidity in the air, so while your air-dried mushrooms seem dry, they are not likely dried enough. I cannot tell you how many times I've had friends pull out jars of air-dried mushrooms only to find they'd grown moldy. Also, air-dried mushrooms shrink and do not look as nice in the prepared dish as dehydratordried mushrooms.

The basic principle is that air flow is more important than heat. All mushrooms should be dried at a temperature of 110° F (43° C) or lower. On your dehydrator, this will be the lowest setting. Do not purchase if the lowest setting exceeds this. This will ensure that the mushrooms dry, rather than cook. Cooking the water out of the mushroom will dry it, but the finished product will lose its fresh flavor and pleasant color. Mushrooms dried with too much heat will become darkened. A well-dried mushroom will retain most of the characteristics of its fresh counterpart and can be used in much the same way. Mushrooms should be dried until they are not pliable anymore. "Cracker crisp" is the term used for a perfectly dried mushroom.

Dried mushrooms should be kept in an airtight container, out of direct sunlight. Glass jars, heat sealed bags, or Ziploc bags work great. They should be kept in a cool, dry place. A kitchen cupboard or pantry is ideal for long term storage. Make sure to squeeze out as much air as you can from the bags without damaging the mushrooms inside. Jars should be filled as much as possible to limit air space within. Jars can also be decorative pieces to place in the soffit space above kitchen cabinets.

Cooking with dried mushrooms is convenient. They can be added directly to a soup or stock if making risotto. For dishes without a lot of liquid, the mushrooms can be rehydrated for a few minutes to an hour in a small bowl using water, stock, wine, etc. Once rehydrated, remove the mushrooms by lifting them from the liquid. The leftover liquid will be flavorful and should be saved, but it could have some debris left behind. Pour through a fine sieve and add to the dish you're preparing, or save for another use.

# Canning and pickling mushrooms

Canning is an ok method for preserving an abundance of some cultivated mushrooms but not really recommended for wild mushrooms because the end product is not much better than canned mushrooms you can purchase at the store, and no one is wowed by them. The only safe way to can any food item that is not high in acid, salt, sugar, or a combination, is to use a pressure canner (cooker). This is easy and time efficient; follow manufacturer's instructions. The old-fashioned boiling water bath method for canning is no

longer recommended.

Pickling can be a suitable way to preserve some wild mushrooms as the end result is a tasty and unusual snack that can be a very nice addition to appetizers or with cocktails. It is standard in Eastern European households to bring out pickled mushrooms to serve when guests arrive. Furthermore, pickling can improve the taste of some strongly flavored mushrooms (e.g., Honey Mushrooms) and texture of others (e.g., Milk Mushrooms). Try your success with Maitakes (see Home Cultivator in this edition)? They do great pickled.

For pickling, a pressure canner is not necessary as the high acid, salt, and sugar inhibits bacterial growth and the boiling temperatures kill all molds and most other microbes present. Purchased pickling spice mixes work just fine and usually have a recipe on the package, which typically consists of making a gallon of pickling brine from equal parts cider vinegar and water, to which you add 2-3 cups of sugar, and 2-3 tablespoons of salt and an equal amount of pickling spice. The authors do not like the flavor of cloves in their pickled mushrooms and recommend removing them if present. Pack canning jars with sliced mushrooms, if using large ones, leave whole if using very small mushrooms. Add one clove of garlic to each jar. Mix all brine ingredients in a saucepan and bring to a boil. Pour the boiling liquid over the mushrooms in the jars. Boil the jars in a canner for 20 minutes. Let stand for one week before opening. One final note: jars of pickled mushrooms make excellent gifts to fellow mycophiles!

#### **Duxelles**

Duxelles is finely minced mushrooms which have been cooked in butter with other minced ingredients like shallots, herbs, and wine, until the liquid from the mixture is mostly evaporated and the resulting paste is almost dry. Duxelles is an excellent addition to everything from eggs to ravioli fillings, sauces, or stuffed inside meats prior to roasting. Simply spread on bread or toast, duxelles make an excellent appetizer. Duxelles will keep for a while in the fridge, but is best kept in small containers in the freezer.

