

Mushroom Inoculation Instructions

Most of our mushroom varieties grow on hardwood logs. Although almost any hardwood will produce some mushrooms, productivity is influenced by the type of wood used. The harder hardwoods such as Oak and Maple are preferred though some softer hardwoods such as Poplar work, particularly with Oyster mushrooms.

The best time to cut logs is in early spring before trees have budded out. Only living, disease-free wood should be cut for mushroom logs.

The best time to inoculate logs is in spring, within one to two weeks after the logs have been cut. This allows the cells in the tree to die but is not long enough for the log to dry out or for other competitor fungi to become established.

Logs can be inoculated with either the drilling method or the totem method.

Drilling Method: Uses 3-4' sections of log 4-6" in diameter. The preferred method for Shiitake, Reishi and Chicken, but can be used with Oysters and Lion's Mane.

1. Cut living tree trunks or large branches into 3-4' lengths.

2. Drill holes in an equally spaced diamond pattern around the entire log.

Drill holes 6" apart, about 1" deep, in a row running the entire length of the log. Move about 2-3" around the log and drill another row, with the holes 3" offset, creating a diamond pattern. Repeat, drilling a row of holes down the length of the log, around the entire log. It's okay if the rows are a little uneven. If you have extra plugs you can drill holes in the ends, but putting plugs or wax on the ends is not necessary. For plug spawn, use a 5/16" (8.5mm) drill; for sawdust spawn, 7/16" (12mm).

3. Inoculate each hole.

For plug spawn, simply hammer a plug into each 5/16" hole. For sawdust spawn, tightly pack sawdust into the inoculation tool and inject the spawn into each 7/16" diameter hole, completely filling the hole.

4. Cover each hole with melted wax using a brush, wax dauber, paintbrush or rag. (After the log is colonized, the wax may flake off, but this is not a cause for concern.)

5. Incubate logs in a shady place, close to the forest floor but not in contact with soil or leaf litter.

Lay down tracks of scrap wood that elevate the logs 1-2" above the forest floor. Stack the logs in a layer with a little space for airflow between each log. If you have more logs, you can make multiple layers by off-setting each layer by 90°. Keep the stack lower than the average snow line, as the snow cover protects the logs from dry winter winds.

Generally no special care is needed while the mycelium grows throughout the log, but watering may be needed if excessively dry weather occurs.

6. Restack the logs in a log cabin fashion for increased air flow and ease of mushroom picking, about a year after inoculation. Log cabin stacks can be as high as 5' in wetter climates but in dry climates shorter stacks, closer to the ground, help keep logs moist.

Fruiting naturally occurs after rains, and occurs in cycles. After the log has fruited once on its own, it can be stimulated to fruit by watering or soaking it in cold water for 24 hours. If it has recently fruited, forcing will probably not work.

Totem Method: Smaller sections of logs are stacked upright with sawdust spawn sandwiched between the sections of log. Large-diameter wood becomes easy to use and attractive to display. The preferred method for Oyster Mushrooms and Lion's Mane. No special tools are needed.

1. Cut three sections of log for each totem: one piece only 1-3" long, and two sections 12-18" long.

2. Bring your setup to your planned incubation place and create totems on site.

3. Open a contractor-size black plastic bag, sprinkle a layer of sawdust spawn about 1" deep in the bottom of the bag, and stand one of the 12-18" logs upright on top of the spawn. Make another layer of sawdust spawn on top of it, and place the second 12-18" log on top of that. Create a third layer of sawdust spawn on top of the second log and then cap the totem with the 1-3" piece.

4. Wrap the plastic bag up around the inoculated totem, securing the top loosely with a strip of cloth or a rubber band, positioned in such a way that an opening allows for some air exchange but does not allow rain water to enter the bag.

5. Incubate the covered totems for 4-12 months. When the logs are covered with a visible layer of mushroom mycelium, the plastic bag can be removed. The totem can be left intact or broken up into individual sections for fruiting.

Wine Cap Inoculation

□□□□ Wine Cap is a vigorous mushroom that grows naturally on outdoor beds of woody debris. While it grows best on straw (not hay) or hardwood chips or sawdust, it can tolerate a mixture that includes some softwood, but generally no more than 25%. You can mix different woody materials—Wine Cap seems to do better if the beds have a variety of particle sizes, such as a mix of both sawdust and wood chips. Avoid branches or other very large pieces of wood as these take longer to colonize and can create too much air space in the bed. Freshly cut wood is preferred, though Wine Cap can also grow well on more aged materials. Many folks are having success with the chip mixes coming from roadside crews pruning under power lines—and it's a free resource!

□□□□ Wine Cap does best in partial shade but can tolerate some direct sun. Ideal locations would be at the edge of fields and woods, around the base of trees, in perennial gardens, or as part of the mulch in vegetable gardens, where annual veggies will provide some shade.

Once established Wine Cap beds require little maintenance. During dry periods, the bed can be watered but do not over-water, as excessive watering can suffocate the mycelium.

If inoculated in spring, Wine Cap can fruit in as little as two months and will produce in the same bed for several years. Fresh woody material can be added each year to maintain the health of the bed. Inoculated material from one bed can be used as spawn to inoculate new beds on your property.

1. Remove any leaves, twigs, etc., down to either bare ground or plain grass in a suitable location. No need to dig a trench. One bag of sawdust spawn is enough to inoculate approximately 16 square feet.

2. Spread mixed woody material over the soil, about 1" deep.

3. Break up the Wine Cap sawdust spawn and evenly sprinkle the spawn on top of the layer of woody debris.

4. Add a second layer of woody debris about 2-3" thick.

5. Thoroughly water the bed.

Special note: Wine Cap is available as sawdust spawn only. No plug spawn for Wine Cap.