

## Growing Mushrooms on Logs

1. Identify a source for hardwood logs. See table below for which mushrooms will grow on which types of tree. Harvest trees no wider than 14 inches, and cut into 3-4 ft lengths. Most species can be grown on either logs or stumps. Thick-barked woods are preferable over "paper-bark" woods such as birch, and any log that is shedding its bark should not be used. Cutting your logs in the late winter or early spring helps to insure that they have high sugar content. Aged deadwood is also not recommended for plugging, as it has a poor nutrient base for supporting mushroom growth. Please do not cut down an old maple or oak tree to grow mushrooms- you can always use stumps, limbs that have just fallen off in a storm, limbs from arborists, or alder which are fast-growing trees which will easily regenerate.

Wood Type	Recommended Mushroom Species
<b>Hardwoods</b>	
<b>Alder</b>	Shiitake, Blue Oyster, Pearl Oyster, Turkey Tail
<b>Ash</b>	Shiitake, Blue Oyster, Turkey Tail
<b>Aspen</b>	Oyster, Turkey Tail
<b>Beech</b>	Shiitake, Blue Oyster, Pearl Oyster, Turkey Tail
<b>Birch</b>	Blue Oyster, Pearl Oyster, Turkey Tail
<b>Chestnut</b>	Lion's Mane, Shiitake, Turkey Tail
<b>Elm</b>	Reishi, Lion's Mane, Pearl Oyster, Turkey Tail
<b>Eucalyptus</b>	Shiitake, Turkey Tail
<b>Hickory</b>	Shiitake, Turkey Tail
<b>Honey Locust</b>	Maitake, Turkey Tail
<b>Maple</b>	Reishi, Lion's Mane, Blue Oyster, Pearl Oyster, Turkey Tail
<b>Oak</b>	Reishi, Maitake, Lion's Mane, Shiitake, Blue Oyster, Pearl Oyster, Turkey Tail
<b>Plum</b>	Reishi, Turkey Tail
<b>Poplar</b>	Pearl Oyster, Turkey Tail
<b>Sweetgum</b>	Reishi, Shiitake, Blue Oyster, Turkey Tail
<b>Softwoods</b>	
<b>Douglas Fir</b>	Chicken of the Woods
<b>Fir</b>	Phoenix Oyster, Turkey Tail
<b>Piñon Pine</b>	Phoenix Oyster, Turkey Tail
<b>Spruce</b>	Chicken of the Woods, Phoenix Oyster, Turkey Tail

2. *Wait 2+ weeks.* Logs should be cut at least two weeks in advance of plugging, and used within 2 months. Freshly-cut logs should not be immediately inoculated; trees naturally produce anti-fungal compounds, which degrade in two to three weeks from cutting. Logs or stumps with fine cracks (called "checks") running through them are more quickly taken over with mushroom mycelium than those without.

3. *Inoculate with dowel spawn after last hard frost (~April 19 in Victoria):* Use a 5/16" drill bit to drill 2-inch deep holes no more than 4 inches apart, evenly spaced in a "diamond" pattern along the length and around the full circumference of the logs. Stumps should be inoculated along the circumference of their face, in the border between the bark and the heartwood. Insert 1 plug per hole and whack it in with a hammer. A 3-4 foot log can take 50 or more plugs, while stumps usually hold 30-50 plugs. The more plugs you use per log, the faster the wood will be taken over with mushroom mycelium. Holes can be sealed with cheese wax or beeswax to protect the mycelium from weather and insects while it is growing; although this step can be helpful, it is not absolutely necessary.

4. *Place them:*

**For Shiitake and Oyster logs:** The logs are best placed outside in a shady and naturally moist location. Logs can be placed horizontally on pallets or cinder blocks, off the ground to prevent competition from soil dwelling fungi. 6-9 months after inoculation, you should see white at the ends of the logs. Once you see this, you can stack them 'log-cabin' style for fruiting.

**For Lions Mane and Maitake:** Let 'myceliate' for 6-9 months, and once you see white at the ends of the logs, bury about 1/4 to 1/3 upright in the soil in a shady, moist location.

**For Reishi:** bury upright in sand in a black planter pot. Reishi likes more heat and does well in greenhouses. Just make sure they don't dry out!

5. *Wait, water:* After you inoculate, you should water the logs 2-3 times a week to maintain the moisture level in the wood. Do not let them dry out, especially in the months after inoculation. It will take 6 months to one year for the mushrooms to fruit for Shiitake, Oyster, and possibly longer for Lions Mane, Maitake and Reishi. After a log is taken over by the mycelium (mushroomyness), they will start to fruit. Once the mycelium is established, you can also force fruit the logs by completely soaking them in water for 12 to 24 hours every five weeks. Your logs should produce for about 1 year per inch in diameter, often 4-6 years. Shiitake and Oysters will fruit multiple times per year, whereas Lions Mane will only fruit about once per year.

6. *ID them before eating them!* Once you launch mushroom spawn outside, you are introducing it to a huge number of wild mushrooms, some of which may be more aggressive than your mushroom spawn, and some of which may be poisonous. Never eat a mushroom growing outdoors unless you have positively ID'd it and confirmed with an expert.

Your local Mycological Society is a great resource for mushroom ID and learning it yourself.

There are many other techniques for inoculating logs, and troubleshooting info widely available online, and in Paul Stamets book "Mycelium Running."

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