

Growing Mushrooms on Logs – a step-by-step Guide

Log cultivation of wood-inhabiting mushrooms is a bit different than bag cultivation; however, it is based on the same concept and above all is easy. It is largely applied in the countryside where logs are readily available. Here you'll find a standard method of growing mushrooms on logs -a step by step guide.



1. Selecting the proper wood substrate

When growing mushrooms on logs you may use deciduous wood such as: beech, poplar, oak, alder, birch or maple. You have to avoid cultivating mushrooms on conifer wood substrates (pine, spruce, fir, etc) because such substrate types contain tannins, resins and other type of wood constituents that inhibit mycelium growth and development through the wood mass. However, some other type of fungi may develop on conifer logs too (e.g., *Pleurotus pulmonarius* or *Auricularia auricula*). You should fell the logs when the sapwood is full of nutrients: late autumn or early spring. Inoculate them after felling because water content inside them is higher than in logs left outside for several months. In the latter case, you have to re-hydrate them by leaving them in water for several days. If you will use softwood (poplar, aspen, etc) logs you will get mushroom fruitbodies faster but of lower quality and

lower overall mushroom production compared to what you'll get when using hardwood (oak, maple, beech, cherry, etc). It will also take a longer period of time until mushroom fruitbody formation when using hardwood. Log size is also important and is directly connected to mushroom fruitbody production and time necessary for the first flush.

2. Tools necessary for the inoculation process



You will need the following tools:

- a drilling machine;
- a hammer;
- plug spawn;
- soy or cheese wax;
- a paint brush or a piece of sponge.
- a pot;
- and a heat source.

3 Drilling holes

Drill holes over the log surface 1.2-2 inch (3-5 cm) in depth and a bit thicker than your plug spawn just to make sure that plugs fit into the holes. Holes are drilled along the length of the log at 6-8 inch intervals. The typical log will have up to 40-50 holes in zig-zag covering its entire surface.



Drilling holes over the log surface

4. Log Inoculation

Keep in mind: the more inoculation points the faster the log colonization by mushroom mycelium. You can purchase quality plug spawn from [Aloha Medicinals Inc.](#) [available mushroom types: oyster mushrooms, shiitakes, Lion's mane, Reishi, Mesima, Swordbelt and many others]. Remember that you have to inoculate only freshly felled logs or logs that have been previously soaked in water for 2-3 days.

Steps to follow:

- a) Take a pot and melt the wax;
- b) Introduce the plug spawn into the holes by using a hammer;
- c) Isolate each hole by applying a thin layer of wax over it.



Plug spawn



Inoculating the log with plug spawn



Sealing the inoculation point with soy wax

5. Log placement

Place the freshly inoculated logs outside in the shade away from direct sunlight. Moisture during incubation is essential therefore you must allow rainfall to fall over your logs or to find some other ingenious method to keep your logs moist. In case of poor rainfall you should water your logs from time to time; however, in order to keep logs at an optimal level of moisture and temperature there are several techniques available. One of them is burying the logs into the sand: this technique prevents moisture loss and keeps temperature at a constant level. You should bury the logs vertically at 4-8 inches (10-20 cm) distance one from another with the inoculated side up and with up to 20 % of log length above ground level. Otherwise, use a hose to spray down the inoculated logs in order to keep moisture.



Place logs outside away from direct sunlight

6. Pinning induction

Pinning induction occurs generally after 8-12 months depending on wood type, log size, inoculation points (number of holes), mushroom type used, strain, environmental conditions and other factors involved into the mycelium colonization process. If you inoculated hardwood logs then you should expect pinhead induction in about 12 to 14 months and you will harvest mushrooms for 3 to 4 years. If you used softwood, you will be able to harvest your mushrooms earlier: after 6 to 9 months and you'll harvest mushrooms for 1 to 3 years. Now, there are several methods to stimulate pinning induction such as cold-shock or log soaking into water. As a general rule stimulating fruitbody formation requires spraying enough water over each inoculated log.

7. Harvesting fresh mushrooms

Harvest mushrooms 4 to 8 days after pinning induction. During this time keep moisture at an optimal level for fruitbody development by using a water spray bottle or device. You should spray the mushrooms 2-3 times per day. After harvest, keep logs moist and wait up to 2 weeks for the second flush. If you will leave your logs outside without taking care of them they will fruit when the outside conditions will be proper for fruitbody formation.



Harvesting fresh shiitake mushrooms



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