

Growing Mushrooms on logs Outdoors

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I have been growing mushrooms outdoors on logs and in beds using straw and woodchips for the past 5 years. I have inoculated 1500 logs thus far and plan on inoculating 300 logs per year.

I select logs in the early spring for inoculation. It is necessary to select trees which have not started bud swelling as these trees will have more carbohydrates concentration. I cut my trees into 40-inch logs and try to keep my log size between 4-to-8-inch diameter, however, I will also use logs up to 10 inches in diameter but will keep them about 30 to 36 inches long. Logs are also cut in Mid-September since they have accumulated high amounts of carbohydrates to survive the winter months. This also spreads the work load over two different periods of the year to inoculate logs. I purchase my spawn from several providers but Field and Forest Products from Peshtigo, WI is my main source. When I first started growing mushrooms on logs, I used inoculated dowels which were tapped into the holes drilled into the logs with a hand drill. A small hammer was used to tap these dowels into the drilled holes. I quit using inoculated dowels quickly because they are so expensive to use, and it takes too much time to inoculate a log with specific mycelium of a mushroom species. I now use sawdust spawn for inoculating all my logs as it costs half as much to inoculate a log. I also use a high-speed drill to make holes into the logs. A thumb inoculator made of a brass tube with a spring will deliver a one-inch-long amount of sawdust spawn into the drilled holes. After filling one log, I will use hot bees wax to cover the holes to prevent drying out of sawdust spawn. I use an Okuda wax applicator instead of wool daubers as it results in less than half as much wax which keeps my costs down. A general rule of thumb is for every inch in diameter of a log you will have one year of producing mushrooms from the log. So, a 6 inch diameter log will produce mushrooms for 6 years. After inoculation, logs are placed on wood pallets and covered with 80% black shade cloth. The inoculated logs require one inch of rainfall or supplemental irrigation per week to keep them from drying out. If inoculated in September, logs will need at least 60 days where air temperatures will reach at least 40 degrees Fahrenheit to colonize mycelium in them.

Log care during winter months. Logs should be stacked 4 to 5 logs deep on pallets and covered with black shade cloth. This will allow snow to accumulate and insulate during winter months. Try to locate the logs piles in areas where they are somewhat protected from winds. In April, I restack all my logs on pallets in a Lincoln log style with three logs placed in one direction and the next row consisting of three logs facing the opposite direction. This allows me to reach in and harvest mushrooms from the logs easily.

You can expect to harvest shiitake mushrooms one year from the date of inoculation. Logs inoculated in the spring will fruit a small number of shiitake mushrooms that fall while they will all

begin fruiting in May the following spring. Shiitake logs respond well to “forced fruiting”. Forced fruiting consists of soaking the logs in cold water for 12 to 18 hours, then remove and stack upright against a tree or what I use is two saw horses, with 8 foot two by four’s set up on each side. Then stack my logs upright against the 2X4’s. I then cover with 80% shade cloth. When nights are cold the logs will take up to 10 days to begin fruiting but when you have temperatures in the 80’s F., you will be getting fruiting taking place about 5 days after soaking. Shiitake is the only species of mushroom which responds to forced fruiting. Not all strains of shiitake respond to forced fruiting. Strains which I use include WR-46, West Wind, Number one Son, and Nite Velvet. I also grow a cold weather strain called snow cap, which naturally fruits one week earlier than other shiitake and later in the fall. Snow cap does not respond to forced fruiting.

I also love to grow both Nameko and Chestnut mushroom strains. Nameko is grown on wild cherry logs and Chestnut is grown on sugar maple logs. Spring inoculated Nameko and Chestnut logs will produce mushrooms in the fall of the first year. Nameko will fruit in late October into November while Chestnut will fruit in September through October in the first year.

I grow 5 strains of oyster mushrooms. Summer white, Polar white, Grey Dove, Pohnu, and Golden. Oysters are very easy to grow and require an Aspen or Cottonwood logs. All species of oyster mushrooms fruit in the same year they are inoculated except Golden oyster. If using these 5 species of oyster mushrooms, you will have oysters fruiting from June through November. Harvest all oyster mushrooms when young and make sure there are no larvae feeding on the mushrooms as all oyster mushrooms grown outdoors are subject to flies laying eggs in the gills and larvae feeding.

Controlling slugs is imperative or significant feeding will occur on all mushrooms. I use an organic product called Sluggo. I spread it on the ground around the base of the logs and when slugs eat it, they get sick and die. It works well.

You can grow Winecap mushrooms in layers of straw and hardwood woodchips. Winecap mushrooms can be started in May and Early September. Winecap mushroom beds established in May should begin producing in July while those beds established in September will begin producing in late May the following spring. I use sawdust spawn from Field and Forest company. One 5.5 pound bag will be enough to inoculate 25 square feet area. I normally use wood chips from my logs that I drilled to fill with sawdust spawn. Laying down a half inch layer of these woodchips on top of the chopped straw will help keep the straw moist and not allow the mycelium to dry out. It is necessary to provide one inch water per week on Winecap beds whether by natural rainfall or irrigation. Winecap mushrooms have a wonderful mild taste and there are many recipes for them on line.

Do not even try growing mushrooms without talking to potential markets. Farmer markets, super markets, restaurants, and specialty stores often are good places to visit prior to planning on growing mushrooms.

Mushrooms grown outdoors often result in a high quality product with added vitamin D. However, the disadvantage of growing outdoors is temperature and rainfall can cause lower quality and slower than expected fruiting.

