

# Introduction to Mushroom Logs

Now that you've completed the mushroom log class, you'll hopefully have a good understanding of the different cultivation methods and fungi used to grow edible mushrooms on logs.

If kept in a moist, shady environment, your newly inoculated mushroom log should start producing delicious native oyster mushrooms (sourced from Delamere Forest) from mid-summer next year. Sometimes the mushrooms can be a bit slow to grow, so don't be concerned if you've followed the guide and nothing shows up, it may take a few months more - even up to the following year. Once your logs begin to make mushrooms, you should get a decent crop each year for the next two to five years.

If you want a more detailed recap of what we covered in the class, this little guide will give you some tips, tricks and resources on caring for your logs, as well as some ideas for further projects.

## Native, edible, log-loving mushroom species

Though many delicious edible species are available from commercial mushroom suppliers (you can even clone-store bought mushrooms and try growing these yourself), not all of these are native to the UK. By growing these species outdoors on logs, you risk introducing non-native fungal species to your local environment, which can wreak havoc with biodiversity by outcompeting native species.

Some examples of invasive fungi include:

- Orange pore fungus (*Favolaschia calcocera*) - escaped its native range of Madagascar in the 1950s and has now spread around the world, becoming invasive in many countries.
- Fly agaric (*Amanita muscaria*) this Northern Hemisphere native has spread to Australia in the last few decades, where it is thought to be outcompeting native fungi.
- Golden oyster (*Pleurotus citrinopileatus*) - originally from Asia, this widely cultivated mushroom has escaped commercial cultivation and is spreading rapidly into North American woodlands, showing the typical characteristics of a recently introduced invasive species.

As fungi are so poorly understood, many times their harmful impact on ecosystems is only discovered once it's too late. That's why we always encourage responsible cultivation of native fungal species in outdoor environments. When looking for spawn (see next section) it's helpful if your supplier can vouch for the mycelium you're buying as being from a fungal species that grows in the UK.

Even though mushrooms like shiitake (*Lentinula edodes*) don't grow natively here in the UK, there are a whole range of other tasty log-loving fungi to choose from. The list below isn't detailed enough to be used as an identification guide, so only use it to help you find native spawn from reputable suppliers.

For each mushroom, their difficulty to cultivate is shown with five mushrooms (🍄 = easiest and 🍄🍄🍄🍄🍄 = hardest), as well as the growing season so you know when to expect them!



## Oyster (*Pleurotus* spp)

Difficulty: 🍄

Typical season: March to November, depending on species.

A great species to try on logs, growing easily on a variety of wood. There are many different species from around the world, UK species include *Pleurotus ostreatus* and *Pleurotus pulmonarius*, but check locality with your spawn supplier.

## Chicken of the woods (*Laetiporus sulphureus*)

Difficulty: 🍄🍄🍄🍄🍄

Typical season: August and September.

A bit more difficult to grow, as each strain seems to prefer the wood it was growing on when it was harvested. Chicken of the woods may not produce mushrooms reliably each year, or the amount that does grow might not be much.





**Beefsteak**  
**(*Fistulina hepatica*)**

**Difficulty:** 🍄🍄🍄🍄🍄

**Typical season:** August and September

Difficult to find spawn as cloning from wild mushrooms is difficult, due to the mushroom's soft texture. About as reliable to grow as chicken of the woods. Rarely, if ever, seen in shops.

**Wood's ear**  
**(*Auricularia auricula-judae*)**

**Difficulty:** 🍄🍄🍄🍄🍄

**Typical season:** Year round, but more abundant in winter

Grows on elder especially, and is a common find in deep winter when little else is growing. Can be slow growing, and is so abundant in the wild that it might only be worth cultivating at home for the sake of a challenge!





**Velvet shank/Enoki**  
**(*Flammulina velutipes*)**

**Difficulty:** 🍄🍄🍄

**Typical season:** October to March

Wild mushrooms look very different to their commercially cultivated counterparts, which are sold bundles of thin white mushrooms (grown by altering light and air exposure). Able to survive freezing, these mushrooms are a common winter find.

**Hen of the woods/Maitake**  
**(*Grifola frondosa*)**

**Difficulty:** 🍄🍄🍄🍄🍄

**Typical season:** August to November

This species grows in the wild at the base of trees, and does particularly well on partially buried logs, which mimics their natural habitat. A trickier mushroom to cultivate on logs than most, but a fun and delicious project for those up to the challenge!





## Lion's mane (*Hericium erinaceus*)

**Difficulty:** 🍄🍄 (for non-native species)

**Typical season:** August to October

Although this species is native to the UK, it's incredibly rare and one of only four fungi which are illegal to pick or sell. Spawn bought from vendors is from commercial culture collections and is likely not native to the UK, so this species might be better for indoor grows where spores can be contained.

## Sourcing spawn

Spawn is the material that contains starter mycelium, which is used to inoculate logs. Depending on your chosen inoculation method, you'll want either sawdust or plug/dowel spawn. Generally speaking, sawdust spawn is more versatile as it can be used in different ways to achieve the same result.

Never use inoculated grain as you spawn for making logs, as it tends to attract insects, birds and rats - all of whom will eat up the delicious grain and the mycelium it contains before it's had a chance to colonise your logs!

If you would like more sawdust spawn to use at home, Myco are currently building up cultures of locally sourced edible fungi (collected within 50 km of the farm, but usually closer!) at a reasonable price. Stock is currently limited, with a 4-6 week lead time, but this range will be growing as the months progress. Please contact [manchestermushroomcoop@gmail.com](mailto:manchestermushroomcoop@gmail.com) to see what's available.

## Wood types and where to find logs

Generally speaking hardwoods, those that lose their leaves over the winter, are preferred by most edible fungi. Softwoods, the trees with needles that stay green all year round, aren't as appealing to fungi as their sap contains more antifungal compounds that can stop mycelium from growing. Some fungi are more resistant to antifungal chemicals, but hardwoods almost always have a higher chance of success.

The size of the log is an important factor, as smaller logs can dry out too quickly. The logs we used in the course were about 20-25 cm in diameter and around 30 cm long - this is probably the minimum size you should use for most projects, though keep in mind that larger logs can be very heavy!

Freshness of the log also is important - logs that are too old can dry out or get colonised by other competitor fungi which lower your chances of a successful grow. Depending on the season, one to three months from cutting is a good window to start inoculating. Check each log for signs of drying (cracks forming) or fungal growth (patches of discoloration running through the end grain), and try to avoid these if possible.

Tree surgeons are usually the best place to source logs from. They know a lot about trees so usually understand what it is you're looking for, and some will provide extra helpful information. If you're in Manchester, Treestation is a great social enterprise who might be able to help you find the logs you need.

## Log inoculation techniques

In the session we covered a number of different techniques, each with their own tool requirements. All methods will work, so it's really up to you which you prefer to use!

### Plug and mallet

With this method we take wooden dowels inoculated with mycelium, and hammer them into holes drilled in the log (50-75 mm apart, in staggered lines down the logs). Holes can be drilled with a manual or electric drill, with the most important factor to consider being the size of your dowels and corresponding holes. We usually use 10 x 35 mm dowels in the class, but as long as you use the correct drill bit for your chosen dowel and drill deep enough, you'll be fine! If any excess dowel is left sticking out of the hole, these can be trimmed flush with a saw.

### Spawn bit and inoculation tool

This is by far the fastest and easiest way to make mushroom logs, so may be of value if you're trying to make lots at a time. However the cost of the tools (most of which have no use outside of mushroom cultivation) can be quite expensive. Similarly to the plug and mallet technique, you should be aiming to drill holes 50-75 mm apart, in staggered lines down the logs. After this, use your log inoculation tool to stab into your bag of sawdust spawn a few times to get a nice solid plug, then inject this into the hole you just created.

### Slices and pockets

These methods are a bit more rough and ready, but allow you to make logs with minimal tools. With these methods you're aiming to cut deep gashes into the logs (no more than  $\frac{1}{3}$  of the way through to avoid splitting), which you then stuff with sawdust spawn until full. These gashes can be made with a handsaw, mallet and chisel, or with a few passes of a chainsaw. It's important to make each slice at least a finger-width wide to allow you easy access to push in your sawdust spawn.

An alternative method is to cut a wide wedge out of the side of your log, pack in some sawdust spawn, then replace the wedge. The wedge is then nailed in place to secure it, and any remaining gaps stuffed with more sawdust spawn. This method can easily be done with just a saw, hammer and a few nails.

## Stacked totems

Though not covered in the class this method works better for larger projects and installations. Multiple small logs are stacked end-to-end, with a layer of sawdust spawn in between. The logs can be nailed in place to avoid toppling over, but be careful not to stack them too high! It's best to start these totems in their final location, as they can be tricky to move later on.

## Aftercare

### Sealing logs with wax

With all of the methods mentioned above, it's important to seal any cut or hole with wax to prevent the mycelium from drying out and to keep out insects which might eat the spawn before the mycelium has a chance to "jump" into the wood (woodlice especially love mycelium!). Wax will break down over time, but not before your mycelium will be well on its way to colonising the logs, so don't worry about topping up old, partially-empty holes.

The cut ends of the log can also be painted with wax to slow down the wood's natural drying process, locking in moisture for the growing mycelium. You may want to consider leaving one or both ends open if you're partially burying your log in soil, but more on this later!

When choosing a wax to seal your logs with, it's always best to go for something food-safe, unscented and biodegradable like soya or beeswax. You can use paraffin-based wax such as those found in cheap candles, but there's always a risk that some of the petrochemical compounds in this wax might transfer into your mushrooms - which isn't great if you're planning on eating them. Bulk bags of raw wax can be sourced from candle making and beauty stores.

### Where to store logs

Once your logs are sealed with wax it's time to store them, and give the mycelium time to grow through the wood. Here you must think like a mushroom, and find a damp, moist location. A shady north-facing garden is good, possibly under some leafy plants to provide extra shelter. You can also get creative and sit them under a leaky gutter, or even bring them into your shower to get a guaranteed soaking whenever you have a wash. If you do bring them indoors, keep your logs away from any potentially damp wood, as you might find mushrooms growing inside your house in a year or two!

If your outdoor space is lacking shade or moisture, another option is to partially bury your mushroom logs. This adds a little risk from soil fungi colonising the wood and competing with

your inoculated mycelium, but generally works quite well. Logs can be buried in soil to around half their depth (standing vertically or horizontally). You can bury them in your flowerbeds or in pots a few inches bigger than the logs themselves.

When it's time to produce mushrooms, if you've picked a good spot the fungi will let you know! Those who've kept theirs in the shower might want to move them outside as the spores drifting out from the mushrooms have been associated with causing breathing issues - usually in mushroom farm workers exposed to high amounts, but still better to be safe than sorry. Once the mushrooms emerge, you can encourage them to keep growing with a few sprays from a water bottle each day, similar to watering an orchid. When it's time to harvest, simply cut or twist the clusters away at the base and clean the mushrooms or debris with a small brush.

The species we used in the class (Delamere oyster, *Pleurotus ostreatus*) could produce mushrooms anywhere from mid-summer right into winter, so keep a keen eye on them during this time! If properly cared for, logs can start growing mushrooms from about 6 months after inoculation if the conditions are right, but different species or bigger logs might take a year or two before mushrooms pop out.

## Other resources

You can follow both Myco and Jon on Instagram [@mycomanchester](#) and [@betterlivingthroughbiology](#), but here are some other resources for those of you wanting to learn more.

### Books

**Collins Complete Guide To British Mushrooms and Toadstools - Sterry and Hughes**

The go-to ID book for UK fungal species, and useful to check for native edible species!

**Growing Gourmet and Medicinal Mushrooms - Paul Stamets**

The holy grail of mushroom cultivation books - covers lots of methods and individual fungi in great depth.

**Organic Mushroom Farming and Mycoremediation - Tradd Cotter**

A good modern book on basic principles of mushroom cultivation.

### Videos

**[How to Grow Mushrooms on Logs | Complete Inoculation Walkthrough - North Spore Mushrooms](#)**

A good partial video recap - including using the spawn bit and inoculation tool.

### Websites

**[www.gourmetmushrooms.co.uk](http://www.gourmetmushrooms.co.uk)**

Sells lots of UK native edible mushroom species, with good traceability. Also currently the only UK vendor that sells specialised log inoculation tools.

**[www.mycomanchester.com](http://www.mycomanchester.com)**

Myco's home on the web, where you can learn more about mushroom cultivation and local species.