

Non-Sterile Mushroom Cultivation Techniques

The Stem Butt

- 1. Collect specimens** – these can be wild (only if you are **sure** of your ID) or store-bought
 - make sure that specimens have visible stem butt, ideally with root-like rhizomorphs still attached. Fuzzy-looking white stuff at base of Oyster mushrooms is mycelia.
- 2. Prepare substrate** – Soak cardboard for a few minutes, or until layers are easily separated, but not quite falling apart.
 - Lay cardboard on flat surface, peel off top layer (leaving corrugations facing up)
 - Have baggie ready, and permanent marker too.
- 3. Inoculate Substrate** – Tear pieces of stem butt along the grain and place small strips on exposed corrugations. (There's no such thing as too little or too much, the difference is only in how long it takes to colonize.)
 - Replace top cardboard layer (or just fold the base in half)
 - Fold/Roll/Lay the cardboard so that the two sides aren't coming apart (a toilet-paper tube works well for this)
 - Place inoculated cardboard in baggie and seal (leaving a little bit of air in the bag)
- 4. Label Baggie** – The date, your name, the name of the mushroom in the bag.
 - VERY IMPORTANT STEP!!! DO NOT SKIP!!
- 5. Wait and Watch** – After only a few days to one week, you should be able to see some growth of the mycelia into the cardboard. The less disturbed/exposed it is the better, so try not to unroll your cardboard every day to check on it, as it may damage or contaminate the mushroom. (I like to peek in the sides to see the mycelia start to run)
 - After a few weeks (this can vary a lot... depending on the strain of mushroom, the level of inoculation, temperature, timing of inoculation in mushroom life-cycle, etc...) or once the cardboard is about $\frac{3}{4}$ colonized with mycelia, (this is to catch the growth when its most vigorous – once the cardboard is 100% colonized, the growth slows down. If it is left for too long, the mushroom could even die back) you are ready to move to the next step.
- 6. Run Mycelia, Run!** – Once the cardboard is colonized, the opportunities open up! From here, depending on what your desired end is for your mushroom, you can:
 - inoculate dowels to impregnate logs for log culture
 - inoculate burlap sacks to then fill with wood chips and created what is known as 'bunker spawn'

- the bunker spawn can then be used to filter above-ground moving water of harmful bacteria, gas/oil spills, hydrocarbon-based pesticides and chemicals (This is specific to oyster (*pleurotus var.*) and turkey tail mushrooms (*trametes versicolor*)
- it can also be used as a boost for landscape installation
- bunker spawn is also handy for fruiting edible mushrooms!
- inoculate more cardboard!
- inoculate coffee grounds (specific to oyster mushrooms)
- inoculate two bales of wet straw with the mushroom by simply stacking bales with the cardboard in between (for larger filters, also larger harvests)
- inoculate an outdoor mushroom bed (or your garden mulch! Especially straw/woodchip mulches)
- have any other ideas? Try them!

What Kind of Mushrooms can I Use?

Most saprophytes (*decomposers*)
(Not chanterelles)

For further resources, help, ideas, etc...

Mycelium Running by Paul Stamets

www.fungi.com (Paul Stamets' website w/products galore)

http://www.ted.com/talks/lang/eng/paul_stamets_on_6_ways_mushrooms_can_save_the_world.html (Paul Stamets talking about some of the work he is doing with fungi)

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