

MAGIC FOR THE MASSES

Psychedelic Mushroom Cultivation Made Easier

1st Edition – 2018



TABLE OF CONTENTS

INTRODUCTION

PF-TEK

DRYING AND STORAGE

DOSAGE

RECIPES

GLOVE BOXES

SPORE PRINTS

SPORE WATER

LIQUID CULTURE

CLONES

THE BEGINNING

Introduction

This guide is an all-in-one primer for people who are interested in growing *Psilocybe Cubensis*. It contains enough basic information to become a self-sufficient grower, with no need for kits or spore vendors. At the same time, it contains a simple way of doing things.

It's organized so that you can follow along in order of the chapters. They go from growing mushrooms to eating them. Meanwhile, you're taking your first spore prints and making spore water, or even taking a clone so that you can go for higher yields.

You can read this guide as a companion as you first interact with the Online Mushroom Community (OMC), which doesn't exist on any one website but rather encompasses all of them. The OMC was the source of all of this information—I have no claim to any of it. Almost all of the pictures were cheerfully lifted from the OMC and search engine results. I'm not trying to reinvent the wheel here; I'm just trying to build a vehicle.

There are some cultivation wizards out there on the forums who have put together some choice threads on cultivation techniques ("teks"). I will leave it to you to find the good stuff but I didn't want you to have to trudge up the mountain of information any more without an updated, complete, accurate map to lead you to base camp.

I don't expect this guide to be the only resource you'll ever want or need, though I think you could grow with just the information contained in it. Take advantage of the experience of knowledgeable growers on sites like Mycotopia.net. They are happy to help if you are eager to learn.

The PF-Tek

Power to the People

For almost thirty years, people have been growing their first mushrooms using the PF-Tek. Invented and popularized by a man known as Professor PF, this method was a leap in simplicity and made magic mushrooms accessible to almost anyone who wanted them.

The professor's little company sold PF-Tek instruction booklets bundled together with the one piece of cultivation equipment the mushroom hobbyist can't get from a local store: spores. It was a lucrative business but it wasn't long until Professor PF's home was raided and he was arrested.

Luckily, thanks to widespread access to the internet, the bell couldn't be un-rung. The PF-Tek continued to be discussed on message boards and forums. It stands today, almost unmodified, as one of the simplest and surest ways to obtain psilocybin mushrooms.



Overview of the Process

Once you gather everything you need, you'll mix a simple recipe using three ingredients: brown rice, vermiculite, and water. That mix will go into canning jars. You'll add a layer of dry vermiculite and then put the lids on, cover them with tin foil, and cook them in a pressure cooker.

After allowing the jars to cool for several hours in the pressure cooker, you'll prepare a sterile workspace. You'll use a syringe to inject spore-laden water into the jars through holes you made in the lids before you started.

Next, the jars will incubate for roughly two weeks. After the first several days, you will notice little bits of fluffy white mold growing in the jars. The mold, called mycelium, will eventually fill the jars.

Once it does, you'll empty the jars. The contents will be solid white and held together by the mycelium into what we call "cakes". Those will go into a humid environment called a fruiting chamber. The cakes will get fuzzy after a few days, and after roughly a week they will start growing little bumps called "pins" that will grow into mature mushrooms over the course of another week or so.

What You Will Need

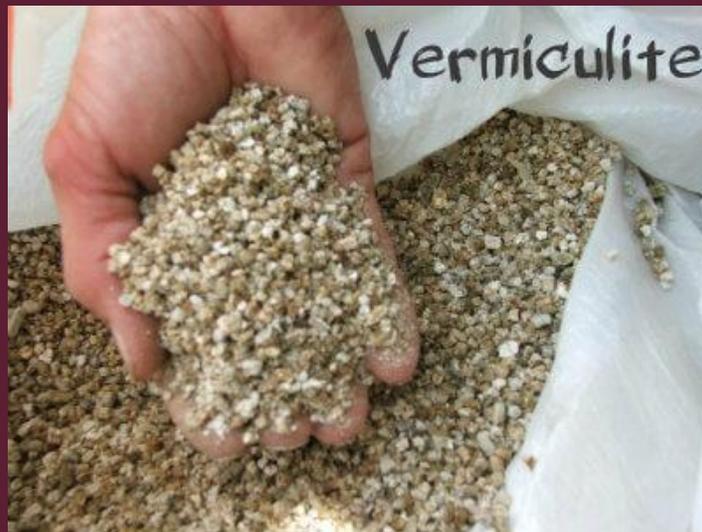
- Wide-mouth half-pint canning jars
- Vermiculite
- Perlite
- Brown rice flour
- Spores
- Pressure cooker/canner
- Fish tank heater
- Plastic storage tub
- Bleach
- Isopropyl alcohol
- Tin foil
- Paper towel

1. **Wide-Mouth Half-Pint Canning Jars:** Time has judged the half-pint jar to be just the right size for this purpose. You can use jars that are larger or smaller than that, but there are drawbacks to both. It's important that you get jars that don't have a "shoulder," because the cake will have to be able to slide out of the jar once it is colonized by the mycelium. There are two main varieties of half-pints: wide-mouth and regular. Both will work just fine, but if you get the wide-mouth (short) ones you can stack them in the fruiting chamber later. Many times these can be found in supermarkets. They often come in cases of twelve.



Wide-mouth half-pint canning jar

2. **Vermiculite:** A soil amendment used in gardening (and mushroom growing) to simultaneously loosen soil, retain moisture, and improve drainage. Vermiculite is mostly found in bags at gardening stores but can also occasionally be found in hardware stores and supermarkets. Vermiculite is used as one of the main ingredients in the PF-Tek mushroom substrate.



3. **Perlite:** Perlite is another soil amendment and can be found in the same places as vermiculite. It is used to create a high humidity environment in the fruiting chamber.



4. **Brown Rice Flour:** This provides all the nutrition needed for mushrooms of the species *Psilocybe Cubensis* ("*P. Cubensis*") to thrive. You can purchase brown rice flour at some supermarkets and health food stores, or you can grind your own brown rice using a coffee grinder.
5. **Spores:** Spores are to mushrooms as seeds are to plants, though of course mushrooms have much different needs than plants. You will need to get some *P. Cubensis* spores. They can be purchased in syringes from a number of online vendors or found for trade among the members of the online mushroom community ("*OMC*"). You should note that magic mushroom spores are banned in the U.S. states of California, Georgia, and Idaho. If you live in one of those places, you may have to get creative. And of course, the cultivation of magic mushrooms almost anywhere in the world is unfortunately illegal.



Spore syringe with cap standing to the side

6. **Pressure Cooker/Canner:** These are used to can fresh foods for long-term storage. They can often be found at big supermarkets or home goods stores, but they are also sometimes found at yard sales and flea markets. And of course, you can order one online. You can make do without a pressure cooker, but it's not recommended. In case you insist, you can use a method called steaming, which is described later.



Presto brand 23 quart pressure cooker

7. **Fish Tank Heater:** This will be used along with a plastic water bottle to create a “heat bomb,” which is used to keep your cakes warm during the incubation phase. More on this later.

8. **Plastic Storage Tub:** This will first be used to contain the cakes and the heat bomb during incubation and then as the fruiting chamber during the fruiting phase. A clear tub is good because it will let light in, but opaque is better for stealth. A good size for a dozen jars is 14 gallons/56 quarts, but there is no size requirement.



The Process

Follow the steps closely your first time through. With practice you will find your own style and be able to try new things, but for now resist the temptation to make changes.

Making the Jars

1. Poke four holes in the lid of each of the canning jars. Make them near the edges of the lid and space them out equally. They should be just big enough for the needle of your spore syringe to get through. You can use a hammer and a nail (or a small screwdriver) to poke the holes carefully while the lid is still on the jar.



Lid with holes

2. Mix the substrate. Very roughly, for each jar, you will use $\frac{1}{2}$ cup of vermiculite, $\frac{1}{4}$ cup of brown rice flour, and $\frac{1}{4}$ cup of water. This actually gives you a very generous amount per jar--those amounts are mostly used just because they're easy to remember. Just remember that the ratio is 2:1:1. So, for a dozen jars, try using 4 cups of vermiculite, 2 cups of brown rice flour, and 2 cups of water. This may still give you some extra substrate to play with. You can make a couple

more jars or experiment with the extra. If this is your first time growing, you might want to make just a couple of jars to do a test run. This will conserve your spore water if you don't have much.

Put the ingredients in a large bowl or pot and mix them well. I mix with my hands, but you can use a utensil if you like.

If it's a hassle to find brown rice flour or you want it to be a bit fresher, you can grind brown rice in a coffee grinder to make the flour. It doesn't have to be a fine powder. Five seconds in a coffee grinder is plenty.

As for water, some people prefer it filtered or even from a stream, but tap water will work just fine.

3. Fill the jars with substrate just up to the bottom of the jars' threads. If you screw a lid on a jar, the substrate should go no higher than the bottom of the band. Don't compress the substrate or pack it down; it should be light and airy. You can drop it lightly in to each jar with your hand or a utensil, and then gently shake the jar until it is level.



Fill each jar with substrate no higher than the arrows in this picture



Like so.

4. With a dry piece of paper towel, wipe the inside of the rim of each jar so that there are no bits of substrate left clinging to it.



5. Add dry vermiculite to each jar until it is full to the top. This dry vermiculite layer protects the substrate from contamination. I like to add enough vermiculite so that it makes a bit of a mound that rises above the rim of each jar. That way it is compressed just a little bit when I screw the lid on, making the layer more solid. Make sure that you don't pack the substrate into the jar, though.



6. Screw the lids on to the jars. Then, put a square of tin foil firmly over each lid so that no part of the lid can be seen.



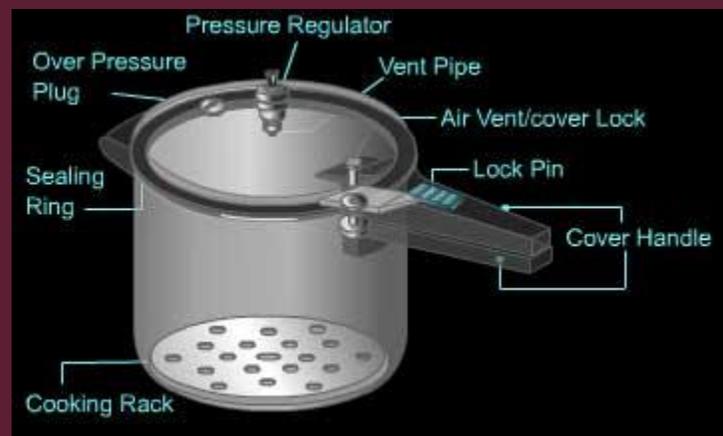
7. Cook the jars at 15 p.s.i. in the pressure cooker for one hour. Make sure you follow your pressure cooker's directions! A pressure cooker can be dangerous if it's not used correctly. If you got your cooker second hand and didn't get directions, find some guidance online. They aren't too hard to use. Just make sure that you get one that can reach 15 p.s.i.

You see, in order to completely destroy bacteria and other contaminants, you need temperatures higher than that of boiling water. Water boils at 212 degrees Fahrenheit (at sea level) while a pressure cooker at 15 p.s.i. reaches about 250 degrees.

There should be a rack in the bottom of the pressure cooker that will hold the jars up off of the bottom. If there isn't one, you can use lid bands or some other bits of metal to hold them up. It's important that the jars don't touch the bottom of the cooker.

Make sure that the jars don't sit too low in the water. It shouldn't rise higher than a third of the way up the jars. You don't want any extra water getting in to the jars. Don't worry—the water won't evaporate quickly because it's trapped in the cooker.

Close the lid of the cooker while it is still cold and then turn on the heat. As the cooker heats up, the air vent will pop up into position (if there is one). Then the pressure will rise. As it reaches 15 p.s.i, the pressure regulator will start rocking and hissing. At this point start your timer. Reduce the heat so that the pressure stays at 15 p.s.i. but the regulator isn't going crazy.



If you simply can't get your hands on a pressure cooker or you're stubborn, you can also sterilize your jars using steam. Niemandgeist gives a succinct description of steaming:

I don't have a pressure cooker, but I do have a large canning pot and a gas stove that I use to steam-sterilize my BRF jars.

The original PF Tek guide instructs you to do steam-sterilization in a pot for 90 minutes. I prefer to let mine go for an entire 2 hours just to be on the safe side and it's always worked like a charm.

You'll want to put something around the entire bottom of the pot upon which you'll place aluminum foil. I prefer to use spare canning jar metal screw-on lids. These lids are sold separately in packs so you should be able to find some Ball brand 1/2 pint lids for sale in a brick and mortar store near you. You can most certainly find them for cheap on Amazon.com or other online retailers. I find that these work the best to line the entire bottom of my canning pot. You could also use rocks or balls of aluminum foil.

As for how much water to use, I put just enough water into the pot on the bottom so that it covers the top of the metal jar lids evenly. I then place a big sheet of aluminum foil on top of that. On top of the foil I then place my glass 1/2 pint jars (or my PP5 plastic pint-sized containers). I like to leave a little bit of space around the edge of the pot to be able to see when the water is boiling by curling up the edges of the sheet of foil.

After you put the water in the pot and everything you can place your glass jars on top of the aluminum foil. Keep the jars from touching the edge of the pot. You want to bring the water in the pot to a rolling boil. Once you've got it boiling you want to turn down the flame on the gas stove so that you keep it simmering for the entire duration of steam-sterilizing and then put the lid on top of the pot. I've never had to add more water. I just occasionally open the lid to keep an eye on things and check on it here and there.

Once your 90 minutes (or 2 hours) has elapsed you need to turn off the heat and just leave it there to cool. I prefer to let the pot cool for an entire day. I generally steam-sterilize during the evening and then inoculate the next evening. It's fine to safely and carefully remove the pot from the stove (use oven mitts!) and put it somewhere else to cool.

8. After the jars are done cooking, let them sit in the pressure cooker or steaming pot for at least eight hours. You want the jars to be at room temperature before you take the next step. It's fine to let them sit overnight.

Inoculation

9. Once they're cool, it's time to set up your workspace. The workspace can really be anywhere, but it's best to use a small room where you have the most control over the environment, like the bathroom. For this next step, absolute cleanliness is key.

Start by removing anything from your workspace that might harbor contaminants, e.g. towels, linens, rugs, laundry, trash cans, etc. Then bring the items you'll need into your workspace. That means the pressure cooker with the

jars inside, your spore syringe, a spray bottle with bleach water (mixed at about 10% bleach), isopropyl alcohol, paper towels, and a bandana. If you're working in the bathroom and there isn't a lot of counter space, bring a flat surface that you can place over the sink. The pressure cooker can sit on the toilet seat lid.

Now close the vents in the room and turn off your air conditioning/heat to slow down air movement. Take a shower and use a fresh towel to dry off. This is to clean your body, which is covered with potential contaminants. If you choose to put clothes on, make sure that they're freshly laundered. If you're working in the bathroom you can shower, dry off, throw the towel on the floor to stand on and get right to work. Tie the bandana over your mouth and nose. This will prevent your breath from contaminating your project, and will also protect you a bit from what you're about to do next.

10. Once you are clean and you've closed the door on your workspace, clean every surface using the paper towels and either the bleach water or the isopropyl alcohol. Then use the mist setting on your bleach water bottle to spray the air so that it settles over the entire room. The water captures airborne contaminants and filters them out of the air while the bleach destroys them. Next, thoroughly wet several paper towels with isopropyl alcohol. Take one of the soaked paper towels and wipe your hands and arms up to the elbows.
11. Get your spore syringe ready. If you bought a syringe from a spore vendor, the needle should still be in its sterile wrapping. Connect the needle to the syringe, being careful not to touch the shaft of the needle itself. If the needle did not come in a sterile wrapping, heat it with a flame until it turns red. A torch lighter is good for this, but a regular cigarette lighter will work too (it just leaves a black residue on the needle--carefully wipe it away with one of the soaked paper towels). After the needle has been heated glowing red, squirt just a little bit of the spore solution out to cool it. From this point on, don't let the needle touch anything other than the lids of the jars.



Flame sterilizing a needle

12. Open the pressure cooker and take out a jar. Remove the foil from the lid and set it aside. Now insert the needle all the way into each hole on the lid and gently press the plunger of the syringe until a little spore water goes into the jar. You will be able to tell if spore water got into the jar both by watching the tip of the needle and watching the position of the plunger in the barrel of the syringe. The smallest bit of spore water is enough for each hole, but you may want to have more than one 10 mL syringe of spore water for a dozen jars, especially if this is your first time, when it may be harder to control how much goes into each hole.



13. Repeat for each jar, wiping the needle with the alcohol-soaked paper towels after every jar.
14. Once you have inoculated all of the jars, you can open the door to the room and clean up. Save the tin foil; you will use it later. You may want to write down the date somewhere, so you remember which day you inoculated.

Colonization

15. Build a “heat bomb” by filling a water bottle with salt water (the salt prevents the growth of algae or other microorganisms) and submerging the fish tank heater in it. The best water bottle for this use will have a narrow mouth that is just wide enough for the body of the heater to fit, but not the head. Put the heat bomb in your storage tub with the inoculated jars. You can use a thermometer to measure the temperature inside the storage tub. It’s a good idea to run the heat bomb for several hours or more to see how hot it is going to get in there and adjust accordingly. You want it to be roughly 80 degrees Fahrenheit. Now you have an incubator.



Heat bomb

You can skip this step altogether and just store your jars at room temperature.

A number of experienced growers do this. The colonization process will be slower, but the idea is that the environment will be less suitable for contaminants. Whatever you do, there is no need to leave the tin foil over the lids of the jars. The vermiculite layer protects the jars from contamination, and you do want some air to be able to get in.

16. After anywhere from three to fourteen days, you will be able to notice little bits of fluffy white mycelium in the jars. The mycelium will grow slowly over the course of roughly two weeks and fill the jars until they are solid white.



Healthy mycelium starting to grow



A closeup of healthy mycelium starting to grow

If you see something growing that is any color other than solid white, your jars are contaminated. You should clean them thoroughly and try again. There is also a wispy white contaminant called Cobweb Mold that spreads quickly and will fill the jars in a matter of days. This is distinguishable from good mycelium by its speed and its thin, cottony appearance. Psilocybin mushroom mycelium is solid white and grows slowly. Another possible contaminant is bacteria, which will make the substrate look wet, and you will be able to smell rot through the holes in the lid. Bacteria smells really bad, like sour feet. Green, pink, orange, black, and any other color mold is contamination as well.

If you see any of these contaminants, you should dispose of the contents of the jar where they are growing. In order to prevent mold spores from contaminating your home, dump the jars outside in a compost pile or bush and rinse them out before bringing them inside to wash. If you live in an apartment, make a bucket of water with a splash of bleach in it and open the jar under water before disposing of the contents and washing the jar thoroughly.



Green mold



Cobweb mold (center top) growing near healthy mycelium (on the left and right). Notice how wispy it is. Cobweb mold will also grow more quickly than mycelium.



A jar of bird seed infected with bacteria (center). Notice how wet and slimy it looks. If your PF jars are infected with bacteria, you will probably be able to smell it through the holes in the lid. It will smell sour, like rotten feet.

17. After the colonization phase, mushroom growth is triggered by light and cooler temperatures. Once your jars are full of healthy mycelium, remove them from the incubator or just turn off the heat bomb. Put them somewhere that they will get at least a little bit of ambient light every day. Don't let direct sunlight or other strong light hit them. If you're using an opaque storage tub you can simply take the lid off for a minute each day. It doesn't take much light to trigger the fruiting stage. If the tub is clear then just make sure direct sunlight isn't hitting the jars and they will get plenty of light.

18. At this point, there is no need to do anything else. Mushrooms can grow right in the jars with no help at all. This method is known as "Mycro-Tek" and was pioneered by Hippie3, who founded Mycotopia.net. This method will not produce good-looking mushrooms—they will be smashed up against the glass in the jar—but it's a great method for stealth. If you forego the incubator and use this method, your jars can stay hidden in a drawer or a backpack the entire time, with no need to bring them out except to be harvested.



Fully colonized jars



Pins growing invitro



Mature invitro mushrooms, ready for harvest

The Birthday

19. However, watching your mushrooms grow to maturity in a fruiting chamber is one of the best parts of this hobby. Once the cakes are fully colonized and you see the first little pins growing in them, then it's finally time to get out the perlite. You are going to use a layer of damp perlite in your fruiting chamber to keep the humidity very high. You may want to put on your bandana when you open the bag, because the dust you'll see is made up of tiny particles of rock that are probably terrible for your lungs. You can add a little water to the perlite while it's still in the bag to minimize the dust.

But before you get started with this next part, clean up your kitchen, wipe down the counters with an antibacterial cleaner or bleach water, and wash your hands. Wash out your storage tub. It's not necessary for everything to be sterile, but it should be nice and clean! The cleaner that you, your equipment, and your home are, the better your chances of success in this hobby.

20. Open each jar and pour the loose top layer of vermiculite off into the compost bin or save it for your garden. You can even save it for the next round of jars if you want. Notice the earthy mushroom smell of the cakes as you open them. Knock each cake gently out of the jar into your hand. Rinse it under cold running water. Get a pot or other container big enough to hold all of your cakes. Gently put the cakes in the container and add enough cold, plain water to submerge all of them. They will float, so you will have to use something to hold them down, like a platter or another container filled with water. Let them sit for about 24 hours. You don't want them to stay underwater for too much longer than that, because they do need air to survive.

The reason for this dunk is that mushrooms are mostly water, so you want the cakes to be as hydrated as possible before they go into the fruiting stage.

21. When the cakes are done being dunked, drain the water from the container and rinse them again under cold water.

Pour about four inches of perlite into the bottom of your storage tub and add water along with several tablespoons of salt. The salt will inhibit the growth of microorganisms. Mix the water into the perlite so that it all gets wet. There should be enough water so that there's just a little standing water at the bottom of the tub. You can pull the perlite to the side to see if there's any standing

water. Once there's enough water, fluff up the perlite as much as possible and make the surface smooth and level.



A tub with perlite

22. In a big mixing bowl, mix some vermiculite with enough plain water that you can just squeeze a single drop of water out of a handful of vermiculite. This is called hydrating to field capacity. Get out the tin foil lids that you saved from when you cooked the jars and shape them into platforms with rims.



Another use for the pieces of tin foil that you used to cover your jars in the pressure cooker. You'll add some damp vermiculite and then put your cakes on here. You don't want the cake to sit directly on the perlite because you will end up with some soggy mushrooms.

Put some damp vermiculite into each of the tin foil lids. One at a time, put the cakes into your bowl of damp vermiculite and roll them around so that the vermiculite sticks to the sides. Put the cakes on top of the vermiculite in the foil lids and then mound a little vermiculite on top of each cake. If you used the short half-pint jars, you will be able to stack the cakes two high if you want.

Put the cakes on their tin platforms into the storage tub, which is now your fruiting chamber. With a spray bottle, mist the inside walls of the fruiting chamber. Put the lid on the chamber.



Double-stacked cakes in a tub, freshly born and rolled in vermiculite, sitting on tin foil platforms.

Fruiting

23. Now your cakes have entered the fruiting phase. Put your chamber somewhere that it can receive ambient light (no direct sunlight). It should be room temperature, though mushrooms can grow if it is a little cool—they will just take longer to mature. Three to four times every day, take the lid off of the chamber and fan fresh air into the chamber. This is very important and has to be done every day! The mushrooms will not grow well if they don't get plenty of fresh air.

At the same time, it's important that the inside of your chamber stays very humid. It should be as humid as possible, and you should see condensation on the inside walls at all times. If there are any dry spots, mist the walls with plain water and check to make sure the chamber is well sealed. There is no need to mist the cakes themselves.

During this time, resist the urge to mess around with your setup or change things. Just make sure you're fanning three to four times a day and make sure the walls of the chamber are covered in condensation and they will be fine.

The maturing mushrooms will grow toward light. If you have a completely opaque chamber, they will grow in all directions, including down in to the perlite. Mushrooms growing in all directions may not be pretty, but it's also not really a problem. If you have a clear chamber, they will grow in the direction of the strongest light source. If there is no strong light source, they may still grow sideways.

There are a number of ways to deal with this. If you have an opaque tub, you can replace the lid with something clear, like a sheet of plastic. That way, all of the light is coming from the top and the mushrooms will grow up. You could get a clear plastic shower curtain for a couple dollars and cut it to the size you want. You'll just need some chip clips to fasten it to the edge of the tub. If you have a clear tub, you can put a small fluorescent light either on the lid or above the tub. However you do it, if you make sure that the main light source is above your cakes, then your mushrooms will grow straight up.

24. After a few days, you will notice that your cakes are getting fuzzy as new mycelium grows.



Cakes getting fuzzy a few days after the birthday

Not long after that, you may see tiny white bumps called primordia. This is also known as hyphal knotting.



Closeup shot of hyphal knotting—the beginning stage of mushroom growth. The little white bumps are primordia

Another couple of days later, you will notice pins:



Pinning double-stacked cakes – Redboy strain

25. Over the course of about a week, your mushrooms will grow from pins to maturity. Just under the forming cap, you will start to see a thin membrane. This is called the veil, and it extends from the edge of the cap to the stem. The best time to pick mushrooms if you want to eat them is just as the veil begins to tear away from the edge of the cap. After that time, the mushroom continues to grow but no more psilocybin is being added, meaning that the mushroom is less potent by weight.



Mushrooms that have been harvested at an optimal time for consumption, just as the veil is stretching under the caps.

If you want to collect spores from the mushroom, then you want to wait until the cap opens fully and you notice purple streaks on the stem. The spores are purple and they will get *everywhere* if you let a mushroom mature enough.



A mature mushroom, still very much edible but past the optimal time for consumption. The cap has started dropping spores, which you can see on the right side of the stem just under the cap. The ring around the stem is the remnant of the veil, which has torn away from the cap.

To pick your mushrooms, grasp them near their base with clean fingers and gently twist until they come free. You don't have to pick all of the mushrooms at once if they're not all ready at the same time. Sometimes vermiculite will be clinging to the base of the mushrooms. You can wipe that off with your finger. Some go so far as to use a toothbrush to clean them.

Contamination

26. The risk of contamination continues when the cakes are in the fruiting chamber. In most cases, if you see contamination, it is time to remove the cakes from your grow area and your home. Take contaminated cakes outside and bury them somewhere, if you can do it discreetly. Sometimes if you bury contaminated cakes in the right place they will fruit outside for you. Compost piles and mulch are good for this. You can even try to tend to the cakes, watering the area lightly.

If you can't find a place for the cakes outside, dunk them in some water with a healthy splash of bleach and then put them in the trash. Get them out of your home as soon as possible.

The only contaminant I would recommend treating is cobweb mold. Cobweb can be sprayed with hydrogen peroxide. The mold disintegrates instantly. If you spray it and it returns, though, it's time to dispose of the cakes.



A PF cake being thoroughly devoured by wispy cobweb mold

Any green mold is commonly referred to as “trich” in the OMC, which is short for Trichoderma. It starts out as a white mold and then turns green when it is sporulating. This stuff is the worst. If you see it on one cake, you can try to isolate the rest, but if it has turned green, it is likely going to spread. If you have a project that was infected by trich, do everything you can to clear your home of its spores before growing anything else. Clean and disinfect all tubs and other equipment thoroughly.



Trich

Sometimes if you see discoloration on your cakes, it's not contamination at all. Bruising can occur on your cakes if they are dehydrated or otherwise distressed. Bruising is blue, and you can distinguish it from contamination by lightly rolling a q-tip on the discolored area. If the q-tip comes away clean, you have bruising. If the spot rubs off, it's mold. Bruising is not the end of the world. Cakes that have been dunked for 24 hours often appear bruised for a couple of days afterward. If you have bruising, think about what caused it. If your cakes are dry, you may need to dunk them.

Dunking and Later Flushes

27. Mushroom colonies are very giving. They will grow mushrooms, or flush, multiple times before they are spent. If you pick all the mushrooms from the first flush and then continue to fan them three to four times per day, they will start growing new mushrooms in about a week.

However, the cakes will be dry after flushing and will need water for later flushes. For that reason, you'll want to dunk the cakes again after each flush. With clean hands, pick them clean of any mushroom material. Make sure to save any pins and aborts; they are very potent by weight. Rinse the cakes with cold running water and dunk them for about 24 hours like you did when they first came out of the jars. After this dunk, it's not necessary to re-roll them in vermiculite like you did before, as there will still be a good amount left clinging to them.

Put the cakes back into the fruiting chamber on the tin foil platforms and fan three to four times a day. They will start flushing again in about a week. The more flushes you attempt, the fewer mushrooms will grow, but it's worth going for at least three. Later flushes are also supposedly more potent!

Drying and Storage

Fresh mushrooms are amazing. In my experience, they give a far more visual experience than dried. Mushroom for mushroom, they are definitely more potent. This is because chemicals like psilocin and baeocystin degrade during the drying process. But, unless you plan to eat your entire crop within a few days of harvesting it, you will need to preserve your mushrooms, usually by drying them.

Mushrooms should be dried quickly and thoroughly in order to preserve their potency. However, you shouldn't try to rush or take shortcuts. Many growers think that you should avoid heat when drying them. Others think a little heat is OK, but don't leave them in the sun or bake them in the oven. Intense light and heat will cause the psilocybin to break down, leaving your mushrooms less potent than they could be.

When they're done, your mushrooms should be "cracker dry". This means that they should be crispy and snap easily rather than bend. A cracker dry mushroom can be crumbled almost to dust in your hands. To stay potent over time, they need to stay cracker dry, which means that they need to be protected from moisture.

Mushrooms can lose their potency fairly easily if they are not stored well. If you make the effort to do it right, though, they can stay good for a long time.

Storing Fresh Mushrooms

If you do plan on eating your mushrooms fresh, you can store them for a few days in the refrigerator. Put them in a paper bag or some other breathable container. Don't store them in plastic.

As another possibility, Hyphaenation experimented by submerging fresh *P. Cyanescens* fruitbodies (mushrooms) in hemp seed oil and storing them in the freezer. Apparently hemp seed oil does not freeze as easily as other food oils do. After five months in the freezer, the fruitbodies were not only preserved, they were still alive and useful for cloning!

Dosing will be discussed later in more depth, but for now you should know that 10 grams of fresh mushroom is roughly equivalent to 1 gram of dried mushroom.

Drying and Storing Your Mushrooms

Start by putting your fresh mushrooms in front of a fan or in a food dehydrator. You can use a small fan if you just have a few mushrooms, but a box fan works great. If you have thick or meaty mushrooms, you can pull the stalk in half from the base up to the cap to help them dry faster. The mushrooms should sit in front of the fan or in the dehydrator for about three days. After that time, they will be almost dry and will look very different from when you picked them. They will be much smaller and wrinkled in texture.



Simple fan drying setup

Once they are fan-dried, you will need to take another step to make them cracker dry. This involves the use of calcium chloride or another drying agent. Calcium chloride is commonly available as DampRid, which can be found in most big grocery stores, either in the hardware section or near the kitchen cleaners. Just don't get a scented variety. You want to seal your mushrooms in a container with the DampRid, but you don't want them to touch it.

One way to accomplish this is with an airtight storage container. Put a generous amount of DampRid in the container, and then put another, smaller container on top of that. Put your mushrooms in the smaller container and then put the lid on the large container.



A DampRid setup. This container (the bigger one) works well because the lid has a rubber gasket and clamps shut.

Another way to do it is to seal the mushrooms and the DampRid into a large canning jar. Just make sure that the DampRid is well separated from your mushrooms.

After a couple of days of being sealed into a container with DampRid, your mushrooms will be cracker dry. If you don't want to store them with the DampRid, just make sure that they're sealed into an airtight container so they are not exposed to moisture over time. Canning jars are good for this because the lids make an airtight seal. You can also toss a couple of silica packets in your storage container to make sure everything stays extra dry. Silica packets are the little packets found in supplement bottles or the pockets of new clothes. They can be purchased online.

Wherever you put them, they should be kept in a cool, dry, dark place for long-term storage. As long as they are in an airtight container, they can be kept in the fridge. Refrigeration isn't really necessary though.

Dosage

There's nothing like eating mushrooms you grew yourself. Here are some things to think about if you're eating mushrooms for the first time.

Psilocybin is a powerful psychedelic drug and has to be treated with respect if you don't want to get burned. It's a good idea to think about "set and setting," especially if you plan on taking a big dose. "Set" is your mindset going into a trip. It's good to feel balanced, lighthearted, and positive when you trip. Your intention can also play a big part if you are seeking a spiritual experience. It may be a bad idea to trip when your life is chaotic or if you've just gone through a tragedy. That said, mushrooms can provide insight and healing.

There is no evidence that psychedelics cause psychological disorders. In fact, there are ongoing studies utilizing psychedelics in the treatment of a variety of disorders. Many of those studies involve experienced therapists. If you suffer from any psychological condition, tread lightly until you know what effect psilocybin will have on you. Take care of yourself.



Your mindset is key going into a trip. Do what you need to do to be in a positive head-space before you start.

“Setting” is your physical environment. Because you’ll be in an altered state, it’s good to be somewhere conducive to a positive experience. Nature is a great setting. If you’re going to dose heavy, your own home might be the best setting. Arrange to be somewhere that you’ll feel comfortable and safe, especially on your first few trips.



Nature may be the best setting, especially if you can go somewhere isolated. Be safe out there!

You’ll also want to know your dose. It’s a good idea to get a scale if you want to be sure of what you’re taking. The most common doses for *Psilocybe Cubensis* are zero to five grams. Microdoses might be measured in tenths of a gram, and a “heroic dose” for most people will be around five grams. It’s important to know that people have different sensitivities to psychedelic drugs. Some people don’t need to eat much at all, while others are hard-headed and will find that they need more than usual to get where they want to go. Unlike with alcohol, body weight is not a factor. Don’t eat more just because you’re solidly built.

The cautious will want to eat a gram or less for their first time. If you want to eat more than that go right ahead, but do yourself a favor and consider your set and setting. With a dose of four or five grams, it may be a good idea to have someone you trust around to help you out if things get rough.



1.5 dried grams of P. Cubensis

It's a good idea not to eat heavily before a trip. Some people will fast on a day that they plan to eat mushrooms. It's a good idea to have a few pieces of fruit handy for after the peak.

Recipes

There are a lot of different ways to take mushrooms. The easiest way is just to put them in your face and chew. Most people don't like the taste of dried mushrooms, though, and I don't blame them. Dried magic mushrooms make me gag. So what other options are there?

Putting Mushrooms in Food

Food can make magic mushrooms more palatable. Mushroom pizza, anyone? You can put fresh mushrooms on a salad if you want to be healthier. You can also blend fresh or dried mushrooms into orange juice, or even make a smoothie. Just put them on whatever you like, but it's not a good idea to eat them with a big heavy meal.

Capsules

Cracker dry mushrooms are easily ground to a powder in a coffee grinder. This is useful for a few different recipes. The easiest way to consume mushroom powder is to put them in gelatin (or vegetarian) capsules, which can be found online or at your local health food store. Just grind your mushrooms to dust, put them in a bowl, and cap them up. If you're making a lot of capsules, there are capsule machines/plates you can get to make them all at once. Bigger capsules, like the "00" size, are better if you are making them by hand. Also you don't have to swallow as many of them.



Capsules are great because you will not taste mushroom at all, until you burp. They're also a bit easier on your stomach. Not only that, but they are easily concealed and don't look like magic mushrooms. They do still look like pills, but at least they don't look like pharmaceuticals. With a little forethought, they can be hidden in plain sight.

The downside of capsules comes with the fact that the mushrooms are ground to dust. This means that there is much more surface area and exposure to air. Even inside the capsules, psilocybin degrades readily. That means that capsules are not good for long-term storage. It's probably best to eat them within a few days of making them. If you really wanted to store mushroom powder in capsules long-term, you could probably do so in an airtight container filled with carbon dioxide and a couple of silica packets. You can make carbon dioxide with vinegar and baking soda. Carbon dioxide is heavier than air, and can be carefully poured into the container with your capsules just before sealing it.

Mushroom Chocolates

Another use for mushroom powder is in making chocolates. A recipe by Oatman uses a 12 oz. bag of chocolate chips, a 10 oz. bag of mint chocolate chips, and one cup of dried, ground mushrooms. You should weigh your mushrooms before powdering them so you have some idea of how much is in each chocolate. Get some chocolate chips and melt them slowly over low heat on your stove. A double boiler works perfectly, if you have one. Or you can just microwave them carefully, stopping every thirty seconds or so to stir until they are fully melted.

Carefully pour your pre-weighed mushroom powder into the chocolate. Powdered mushroom creates a lot of dust, so you might want to wear a bandana over your face if you're using a lot of powder. The dust won't make you trip but it will clog your sinuses. Mix the powder and chocolate well, so that the powder is evenly distributed. It's a good idea to use a rubber spatula to make this recipe, because you'll be able to scrape the sides of your containers well.

Use the spatula to fill a chocolate mold that has been lightly greased with cooking oil. You can use an ice cube tray as a mold. Don't fill it up to the top, though, or you'll end up with massive hunks of chocolate. Fill the cells halfway instead. Then put the trays in the fridge until the chocolate is solid again.

A good way to store these is to wrap them individually in tin foil and put them in the fridge. Even though you're using mushroom powder, the chocolate protects the powder from light and air. So, chocolates should stay potent for a long time as long as they stay somewhere cool.

Chocolates are also slightly more stealthy because they don't look like mushrooms. Law enforcement has known about mushroom chocolates for a long time, though, so don't expect ice cube tray chocolates wrapped in foil to go unnoticed if they're discovered. With some ingenuity, you can make chocolates that don't look so obvious.

Mushroom Tea

When you make mushroom tea, you're performing a basic chemical procedure known as an extraction. Submerging mushrooms into acidic hot water draws psilocybin into the water, and then the mushrooms themselves can be discarded. This is a good way to take psilocybin because it can make the trip come on faster and will help reduce "body load" for some people, meaning that they will experience less nausea and other discomfort.

Start by weighing your dose. Because the hot water doesn't extract 100% of the psilocybin from the mushrooms, you might choose to use a slightly larger dose. Then chop the mushrooms by hand, as powder will be harder to strain out of the water. Some people drink the mushroom sludge along with the tea. If you plan on doing that you can powder the mushrooms.

Put the mushrooms in your tea cup and add *just enough* lemon juice that it saturates them. Let that soak while you start heating up your water in a small pot on the stove. You just want enough water to fill your cup. Once the water is simmering, put the lemony mushrooms from the cup along with a tea bag into the pot and gently

simmer for 10-15 minutes. You don't need to boil them, just simmer. I like to use mint tea.

After they are done simmering, strain the water through a fine mesh colander or coffee filter and discard the mushroom sludge. Add some honey or sugar to taste and drink it once it's cool enough. I recommend eating something light beforehand to help soak up the tea.

Storing Mushrooms in Honey

Honey is a great way to store and eat your mushrooms, if you like honey. It protects them from oxidation by encasing them in delicious goo.

TVCasualty's TV Guide: Storing Your Fungi in Honey

- 1 ounce (28 grams) powdered cracker-dry fungi
- 3.0 grams of Gingko biloba leaf powder [1.5 teaspoons or approx. 7.5 mL]
- 1/2 teaspoon cinnamon [2.5 mL]
- 1/2 teaspoon ginger [2.5 mL]
- 1/4 teaspoon nutmeg [1.23 mL]
- 1/2 cup honey [~120 mL]



This recipe uses spices to improve flavor and reduce stomach upset. It also includes Ginkgo Biloba, which increases oxygen flow to the brain and potentiates the trip slightly. It's also a good recipe to use if you want to take some on the road, because it doesn't look like mushrooms.

First, put a sturdy glass measuring cup into a pot of water lined with a washcloth. Put the pot on the stove. The washcloth keeps your measuring cup off of the bottom of the pot and prevents it from cracking. Add the honey to the measuring cup and apply medium heat to warm the honey. Warm (not hot) honey will be easier for mixing and pouring. While the honey is getting warm, grind your dried mushrooms in a coffee grinder. Since you're working with powdered mushrooms and spices, you may want to wear a bandana over your face to protect your sinuses.



Once the honey is warm enough that it thins out, gently add the powdered mushroom and other ingredients and stir thoroughly. A butter knife works well for this. It may take a lot of stirring to get all of the ingredients evenly mixed into the honey. Once everything is mixed well, pour the honey from the measuring cup into whatever container you like. Little quarter pint canning jars work well for this. Use a rubber spatula to scrape the sides of the measuring cup so that you don't leave any honey behind.



With this recipe, one *level* teaspoon equals a gram of mushroom. Storing the honey in the fridge or freezer will help it stay potent for a long time, but you might want to pull it out in advance so that it warms up by the time you're ready to eat it. It's a lot easier to work with if it's not cold. Once you eat it, be ready because it comes on quick!

Golly's Honey Tek 2.0

For this tek, you'll first extract the psilocybin out of the mushrooms with acidic hot water just like you're making mushroom tea. Then you take it one step further by reducing the tea, filtering out the mushrooms, and adding the filtered tea to honey. This method has the advantage of getting rid of the mushroom material. Also, you end up with a product that looks a lot like plain old honey.

Start by warming about a quarter pint (~125 mL) of honey on the stove. Use a double boiler, or a measuring cup in a pot of water on the stove. If you use the measuring cup or other glass container in a pot of water, always put a washcloth in the pot to separate the glass from the bottom of the pot.



While the honey is getting warm, crush 40 grams of *P. Cubensis* mushrooms. You don't want them to be powdered, because powder will be difficult to filter out of the tea you are about to make. Crush them by hand or grind/blend them briefly. Put the mushrooms in a saucepan with a quart of water and a tablespoon of vitamin C powder, which is available at health food stores. Simmer for twenty-five minutes.



Set up a strainer using a colander and a piece cut from a polyester dress shirt. Dress shirts are made in a way that is good for fine filtering, and the piece you cut out will last through many extractions. After the simmer, pour the tea into the strainer and let it drain into a frying pan. Once it has drained, pick up the dress shirt piece and squeeze all of the water you can into the frying pan. Rubber gloves will help a lot—the

water will be hot! Then pour ½ cup of cold water into the strainer and squeeze it out again.



Reduce the tea in the frying pan using medium to high heat and stirring constantly. It will start to thicken. Reduce the heat as it thickens. Once it has thickened to roughly the consistency of the warm honey, add about half of the honey to the frying pan. Continue to stir for another minute or two until the honey is well-mixed.



Pour the contents of the frying pan into a clean jar for storage. It should fit into a quarter pint jam jar. As it cools, it will take on the consistency of jelly. It's a good idea to put it in the fridge for long-term storage, but don't put it somewhere that an unsuspecting person might eat it! The resulting product won't look or smell much like mushroom and will be potent. A teaspoon will be roughly equivalent to a gram with this recipe.



Glove Boxes

The PF-Tek can be done in “open air,” though you will probably want to do it in a small closed room as described earlier. However, there are other times when you will want to have more control over your environment for better protection from airborne contaminants. For example, you probably don’t want to do your spore printing and cloning in an open air environment (more on those procedures later).

The reason for having a small closed room is because you are trying to keep the air as still as possible. That way, contaminants aren’t flying around so much and landing on your work. Preventing air currents is easier in a small room than a large one, but it’s even easier in a box. That’s where the “glove box” or “still air box” comes in to play.

The glove box is literally a clear box with two holes just big enough for you to put your hands into. You put your materials in to the box, close it, sterilize the air inside it, and then do your work. You still want to sterilize your work space outside of the glove box too. Use your ~10% bleach solution to sterilize the air inside the box. Some people prefer to spray lysol instead of bleach, but for Dog’s sake don’t use Lysol in a glove box if you plan on sterilizing your instruments with a flame. Lysol is flammable and you’re just concentrating it by spraying it inside a box.

The simplest glove box is made of a clear plastic storage tub, much like the one you used for your fruiting chamber. It will be upside down, with the lid on the bottom. That way, you can put your syringes, jars, and cleaning supplies on the lid and close it by putting the box itself upside down on the lid. Or if you like you can orient it so that it sits on its side and then put the arm-holes in the bottom. This might work better if the bottom is harder to see through, because then you will look through the side of the box instead. It doesn’t really matter how you do it, so long as it works for you.



A simple glove box

If you're good with tools then I don't have to tell you how to put the holes in the side. If you're not handy (or just lazy) you can put a smallish metal coffee can on your stove burner and use it to burn the holes. Be careful not to burn yourself! Remember, your holes should be just big enough for you to reach through them to any part of the inside of the box comfortably.

Spore Prints



Spores are roughly analogous to seeds. They are the means by which fungi reproduce. Thus, if you can harvest spores from your mushrooms, then you can be completely self-sufficient and grow mushrooms indefinitely with no need to buy, beg, or trade for spores.

It's a very good idea to learn how to do this even if you are lazy. There's no guarantee that you will be able to buy spores legally in the future. Also, part of the fun of growing mushrooms is trying different varieties. There are a lot of different varieties of *P. Cubensis*, often named for the regions where they were originally collected. Common varieties include Amazonian, Hawaiian, Golden Teacher, B+, and the highly sought-after Penis Envy. Varieties are commonly known in the Online Mushroom Community as "strains," though that's not an accurate term. The point is that if you can create spore prints, you can trade with other mushroom enthusiasts and add different varieties to your collection.

Spores form on the gills of *P. Cubensis*, on the underside of the caps. As each individual mushroom matures, the cap will expand until the veil connecting it to the stem tears away. The cap will continue to open until finally the edges turn upward. At

this point, you will start to notice a purple coloration on the stem. That purple color is caused by many thousands of microscopic spores that have been ejected from the gills of the mushroom. If you allow the mushroom to continue maturing, the spores will start to cover the mushrooms, the cakes, the perlite, and the walls of the fruiting chamber. A dense flush of sporulating mushrooms can really make a mess.



Some of these caps are ready for printing. The dark spots you see on a few of them are spores.

In order to save the spores to use later, you're going to cut the cap off of a mature mushroom and place a square of tin foil underneath it. The pattern of spores that the cap leaves on the tin foil is called a spore print.

As always, it's very important to work in a clean environment when taking spore prints. A single spore print will allow you to grow many, many mushrooms, but if you can't make a clean print then it is worthless to you. For this reason, you can't just make prints on your kitchen counter if you want to grow with them. You will need to use your clean workspace and you'll want to use your glove box.

Besides the glove box, for this method you'll need a small roasting pan with a rack, some ziplock button bags, a pair of scissors, and of course a fruiting chamber containing mature, sporulating mushrooms. The caps should be wide open. You should be able to see purple spores on the stems and elsewhere.

The wires of the roasting pan's rack should be spaced out narrowly enough to hold up the mushroom caps you'll use to print. Start by cutting out some squares of tin

foil that are the right size to fit into your button bags. They should be a little bit smaller than the opening of the bags so it is easy to slide them in. Arrange the squares side by side on the bottom of the pan and place the rack over the tin foil. Then cover the pan with a large piece of tin foil and bake the whole thing in the oven at 400 degrees for half an hour to sterilize. Once it's done baking, let it cool for several hours with the oven door closed.



Roasting pan with rack and tin foil squares

When the pan is cool, set up your clean room. Remove anything that might harbor contaminants like rugs, towels and other linens, hygiene products, etc. Take a shower and dry off with a fresh towel or at least wash your hands and forearms thoroughly and put on clean clothes. Put a bandana or dust mask over your face. Bring in your glove box and use a ~10% bleach solution to wipe down all surfaces including the surfaces of the glove box. Get the roasting pan out of the oven, still covered in tin foil, and put it in your glove box. Close the glove box. Get your fruiting chamber containing mature, sporulating mushrooms and bring it to your clean room. Get your scissors and wipe them thoroughly with isopropyl alcohol.

Spray your bleach solution into the air and let it settle. Just be careful not to get bleach in your fruiting chamber or on the foil squares in your roasting pan. The bleach can cause mutations or worse. Also spray into the glove box and let it settle. Wipe your

hands and forearms down with a paper towel soaked in isopropyl alcohol and wipe the edges of the lid of your fruiting chamber too. Once all of the bleach has settled, reach into the glove box and gently pull the tin foil off of the roasting pan, setting it aside so that you can put it back on when you are ready.

Next, gently open your fruiting chamber. Wipe your scissors and your hands very thoroughly with isopropyl alcohol again. Choose a mushroom cap and very gently grasp the edges with your fingertips, then cut the stem just below the cap. Put the cap into the glove box and on to the roasting pan's rack situated above one of the tin foil squares. Repeat until there are as many caps in the pan as there are tin foil squares.



Mushrooms caps dropping spores on a rack

Once all of the caps are in the pan, cover the pan back up with the big piece of tin foil. From here, the caps will need roughly 24 hours to deposit spores on to the tin foil squares. The pan should sit covered and undisturbed for that time. If you can, leave it in the glove box and close the door to your clean room for that time. You can cover the arm-holes to the glove box with something clean to help keep out contaminants. If you can't leave the glove box undisturbed for 24 hours, you can thoroughly wrap the pan in a new garbage bag and put it somewhere else for that time.

After the 24 hour period, set up your clean room again and do all of the cleaning, wiping, and spraying you did before. This time, thoroughly wipe down a pair of tweezers with isopropyl alcohol or even bake them in the oven to sterilize. Also, bring your button bags into the clean room with you. Don't forget to cover your mouth and nose. Wipe your hands and forearms thoroughly with the alcohol.

Once you're set up, pull the tin foil off of the pan in the glove box. You should be able to see purple spores on the tin foil squares in the bottom of the pan. If there are none or the squares are only very lightly covered, you can cover the pan back up and try letting it sit for another day. If they are ready, pull the rack out of the pan, exposing the tin foil squares covered in spores—they are now spore prints. Use the tweezers to gently pick up each square, put it into a button bag, and seal the bag. Do this until all of the prints are sealed into the bags.



Spore prints in baggies

Once the bags are all sealed, you don't have to be sterile any more. Tidy up your clean room. Label each spore print with the date and the strain. They can be viable for years, but they are best used within a year or so. It's a good idea to get into the habit of growing out each strain in your collection once per year and taking some new spore prints.

Spore Water

Making A Lid for Spore Water and Liquid Culture

Now that you have some viable spore prints, you need to be able to put them to use. They aren't going to do you any good sitting in the button bags. So, when you're ready to start a new grow using a spore print, you need to make some spore water. With spore water you can make spore syringes, and with spore syringes you can inoculate jars. With this final step, you will have closed the life cycle of the mushroom and you'll be a self-sufficient grower.

You will store the spore water in a mason jar with a specialized lid that will allow you to insert the needle of a syringe but will also prevent airborne contamination from getting in to the jar. To make the lid, you will need some silicone, two small washers, and some tyvek. The silicone and washers can be found in the hardware section of your local megamarket or in a hardware store. Tyvek is a papery material that is useful as a filter: it allows air to get through while filtering out mold spores and other particles. Tyvek is used to make envelopes and there are lots of places you can buy it, but you can get it for free at your local post office. There, tyvek comes in the form of priority mail envelopes.



Tyvek envelope

For spore water and liquid culture, you can use any kind of jar, including the wide-mouth half-pints that you use to make PF cakes. I like to use pint jars because they hold more water. Go ahead and make two or three of these lids at a time; they will come in handy.



Comparing the different mason jar sizes. Pint jars are good for spore water and liquid culture.

Start by punching two holes in the lids of your jars. They should be about a quarter inch wide. You can use a drill or a hammer and screwdriver to make the holes. If you use a hammer and screwdriver, the holes will have jagged edges on the underside and you may want to pound them flat.



On the tyvek, trace some circles using one of the washers and cut them out. These tyvek circles will be the filters.

Get some paper towel to help you keep from getting silicone everywhere. Put a little silicone around the edge of one hole and put a washer over the hole, making sure that the silicone makes a seal between the washer and the lid. Then do the same thing for the other side of the same hole. You can let that set for a while to allow the silicone to dry, or if you are careful you can keep going.



Put a little more silicone on each washer and then put a tyvek circle on each one, making sure that they are fully sealed to the washer and also that the hole in the lid remains open.

On the other hole in the lid, put a fat glob of silicone on each side. This will be where you put the needle when you inject something into the jar or draw something out of it. The silicone allows the needle through, but then closes up as the needle is pulled out. A good glob of silicone will allow you to do this many, many times.



A finished lid for use with spore water or liquid culture, with the tyvek filter on the left

The tyvek acts as a filter, but it also allows the pressure in the jar to equalize when it is cooked and when liquid is injected or drawn out. It is important that you have tyvek filters on both the top and bottom of the lid, separated by washers, because

it creates a space in between the two filters. That way, when the bottom filter gets wet, the top one will stay dry. This helps prevent a wet filter from becoming a vector for contamination.

Making Spore Water from a Spore Print

Now that you have both your lid and your spore print, you can make your own spore water. You can make a whole lot of spore water from a single print, so from here on out you will have no need to order spore syringes from a vendor. You will need a clean spore print in a button bag, a spore water jar with the lid that you just made in the last section, some filtered water, and a syringe. Hopefully you saved that first syringe you bought from a vendor, because you can use it over and over again. If you didn't save it, you can buy new ones online. 10 cc syringes with 16 gauge needles work well.

Start by putting some water in your spore water jar. Filtered water is best. If you're using a pint jar, you can fill it pretty much as full as you want. I fill it about two thirds full. If your spore print is very light or very small, you may want to use a little less water. Then put the lid on and cover it tightly with tin foil.

If you have a used syringe, draw some water into the barrel and shoot it back out once or twice before filling it all the way up with water and wrapping it in tin foil. If you have a brand new syringe in a sterile wrapping, there is no need to do any of this, because the syringe is already sterile and protected.



A new syringe in its sterile wrapping

Put your wrapped syringe and spore water jar in the pressure cooker. If these are the only two things in there, you can cook them at 15 p.s.i. for half an hour. However, you may want to make some PF jars at the same time. If that's the case, cook everything for an hour. If this is your first time making prints or you're not sure how clean a print is, you may want to make just a couple of PF jars to test the print at first. You will be able to save the spore water you make for later, once it's tested.

Once the pressure cooker has completely cooled, set up your clean room in the same way as you did when you did the PF Tek. It's a good idea to use a glove box for this procedure. When everything is ready and you are closed into the clean room, wipe the outside of your spore print baggie with isopropyl alcohol, including inside the lip of the ziplock (don't open it to wipe it down, just wipe the part that's on the outside of the zipper).

Unwrap your syringe and take the foil off of the lid of your spore water jar. They should both be sterile at this point but wipe both the needle and the silicone on the jar lid with alcohol for good measure. Push the plunger on the syringe all the way in before sticking the needle into the jar through the silicone glob and filling the syringe all the way up with water.



Wipe the needle with alcohol again and, making sure that the needle doesn't touch anything, gently open your spore print. Being very careful not to puncture the

bag, put your needle down into the spore print bag and empty all of the water into it. Gently rub the bag with the water in it to rub as many spores off of the print and into the water as possible. The water will turn purple.



Once you are satisfied that as many spores as possible are in the water, draw as much of the water as possible back into the syringe. The water should be nice and purple. Wipe the needle and the silicone on your jar lid with alcohol, and then shoot the contents of the syringe into the spore water jar.

The water will not be purple any more, but rest assured that there are more than enough spores to make all of that water very viable. If you used a pint jar as your spore water jar, you will easily have enough spore water for dozens of spore syringes from just one print.

If you made some PF Jars at the same time, you can inoculate them now. Draw some spore water back into your syringe and shoot the jars as before. Now that you have so much spore water, you don't have to worry about putting such a little amount into each hole and can use a half cc for each one if you like. Just make sure to wipe your needle with alcohol each time between jars and before you put it back into the silicone of the spore water jar. Once you are done, you can cover the spore water jar with tin foil, put it in a plastic bag or other clean container and store it in the fridge. It will stay good for months. Make sure to wipe it down with alcohol (especially the lid) just before you use it next time.

Liquid Culture



A healthy liquid culture, full of live mycelium

Liquid culture (“LC”) is another inoculant. Instead of spores, it contains live mycelium. Like spore water, you can use it to inoculate PF Jars or spawn. A major advantage is that you can use liquid culture to expand a small amount of inoculant. For example, if you purchase one spore syringe from a vendor and you can make a viable LC, you can use one cc of that spore water to inoculate an LC and turn it into a dozen syringes’ worth of inoculant.

Another advantage of LC is that you can often see the earliest growth in your jars within 24 hours of inoculation. Liquid culture is also used for cloning strong fruiting strains, which is what you want if you’re trying to maximize the yields of your grows.

In order to make LC, you simply need to add a nutritious sugar-based substance to water. That substance is often honey or Karo syrup—many growers prefer Karo. The Karo should be added to the water at a 4% ratio. If you’re using a pint jar (with your specialized liquid culture lid from the last chapter), fill it 2/3 of the way with *distilled* water and add a tablespoon of Karo. Mix well with a spoon. It will be easier to mix if the distilled water is at least room temperature. Put the lid on and cover with tin foil.

You don't want to cook LC as hard as you cook PF jars. 20 minutes at 15 p.s.i. is plenty. Some growers use lower pressure. For example, Hippiie3 cooked his liquid culture at only 5 p.s.i. for 20-25 minutes. The reason for the lower cook time and lower pressure is that you don't want the sugars to caramelize, because it inhibits growth. Caramelized liquid culture will appear brown or yellow after being cooked.

Once your liquid is cooked and cooled, you can inoculate it in your clean room with spores, mushroom tissue, or another liquid culture. Incubate it at the same temperature as PF jars, around 80 degrees Fahrenheit. You will start seeing little white globs of mycelium that will get bigger until they fill the jar. Shake your LC once or twice during incubation to break up the globs and encourage faster growth. Once there is enough mycelium in the water that you are sure to suck a good amount into a syringe, your LC is ready. Prepare whatever project you want and use it up. Shake the jar well just before drawing the LC into a syringe.

You should only see fluffy white mycelium in your LC. Anything else is likely a contaminant. Look out for large amounts of sediment or little dark specks. It's a good idea to test a new LC on a couple of jars before using it for any large project, especially if you are new to cultivation. You can also post pictures anonymously on a magic mushroom forum to ask experienced growers whether your LC looks good.



Liquid culture in syringes

A full jar of mycelium will stay good for a few weeks in the refrigerator. You can also stall the growth in the fridge mid-incubation if you have to delay.

Clones

One of the best things you can do with a liquid culture is clone a good fruiting strain. When you inject jars or liquid culture with spore water, you're doing something called multi-spore (MS) inoculation. With multi-spore, you end up with a random mix of genetics that may or may not fruit well. This is because each spore has its own genetic makeup and you're essentially throwing a handful of them at the wall to see what sticks. But with a clone, you choose a single strong strain. You know it's good and it's the only thing you put into your jars.

In order to make a clone, you will take tissue from a growing mushroom and put it into a liquid culture or other medium. New mycelium will grow from the tissue you choose. That new mycelium will have the same genetics and characteristics as the single strain that grew the original mushroom. So, when you use the liquid culture for a new project, the whole project will have those characteristics instead of just the one mushroom you cloned.

Start by making your liquid culture and cooking it in the pressure cooker for 20 minutes at 15 p.s.i. along with a sharp blade wrapped in tin foil. It doesn't really matter what kind of blade you use. You just need a small blade that can withstand the intense heat of the pressure cooker. A scalpel or hobby knife works well. Once the pressure cooker is cool, bring it into your clean room along with your fruiting chamber.



Hobby knives are inexpensive and very useful for cloning. You can find them in your local art supply store and in large grocery stores.

Clean yourself up and disinfect the room well. Like when you're making spore prints, you need extra clean conditions to prevent a clone from getting contaminated. Put your blade and liquid culture into your glove box and close it. Remove the band from the lid of your liquid culture so that you can simply lift one side of the lid when you are ready. Unwrap your blade so that it is ready. Then open your fruiting chamber and with very clean hands (wiped with alcohol) harvest the mushroom you want to clone. Take it into the glove box. Pull the stem of your mushroom gently in half with your hands. Then use a scraping motion with your blade to get a piece of mushroom tissue from the inside of the stem onto the blade. Drop the tissue into your liquid culture. Immediately put the lid on the LC and screw the band back on.



Pulling the stem of the mushroom apart by hand before scraping a piece from the inside.

Now your liquid culture will incubate and grow out as described in the last chapter, with the mycelium growing off of the tissue you used. Remember to shake the jar once or twice during the growing process to help break up the mycelium and speed up growth. Once it has grown enough, you can use it as inoculant. As with any other inoculant you prepare, it's probably a good idea to do a couple of test jars before putting a lot of time and materials into a big project. That way you know if you have a viable, clean culture. You can store the liquid culture in the fridge and it should stay good for at least a couple of weeks. Put the jar in a sealed container or bag to protect it

from the environment in your fridge. Refrigerators are relatively dirty and you don't want to cover the outside of your liquid culture with contaminants!

Here are some considerations from veteran grower Reverend Trips for picking a mushroom to clone:

1. I like cloning from a young fruit from the first flush. I like the first flush because the younger the mycelium is, the more vigorous it is, and it is also less likely to harbor any contamination. It is hard not to look at a massive beautiful fruit from a third or fourth flush and want to clone it, but in my experience you won't see that trait again until that clone is grown out to the third or fourth flush again. I'm not sure why fruits from the later flushes get so big, but I always thought it was because the mycelium is weaker and damaged, and produces less fruits, so the fruits that do develop, can pig out on the remaining nutrients and moisture. Not sure on that, but it makes sense to me.
2. I look at the individual fruit, without any consideration to the surrounding fruits. I personally have seen no advantage to select a fruit that is in a cluster, because some of the best clusters I've held in my hands came from clones of a stand-alone fruit.
3. I like large, strong, and healthy looking fruits, and is why the one on the top left was chosen [see the picture below]. It was given a squeeze test first to see if it was solid. If it felt like it had a hollow stem, it would have been ruled it out. The one on the bottom right was chosen, because you can just tell it is going to be a fatty.



Of these, Reverend Trips picked the mushroom at the top left to clone

The Beginning

Your key ability as a cultivator will often be patience. Sometimes things take longer than you expect. Other times things don't work out right away and you end up with contaminated projects. Just hang in there, keep trying, and keep learning--you *will* succeed.

Follow the directions in this guide and you will be a completely self-sufficient cultivator in no time. Keep your grows to yourself to keep yourself safe. Word spreads fast, and even your friends might not be good at keeping your secrets. Self-sufficiency and discretion don't necessarily mean isolation, though. There can still be some measure of anonymity on the internet. The online mushroom community is a unique collection of characters, and many of them are very knowledgeable. There is much more to learn about topics like agar work and powerful exotic species of mushroom.

Look around and find a site that suits you. Just be careful not to reveal any identifying information about yourself or anyone else. It's a good idea to use a virtual private network (VPN) and learn a few other things about being safe on the internet. For instance, if you post grow pictures, make sure there are no clues about who you are, like pictures of your fingertips (prints can be "lifted" from pictures). If you take pictures with your phone, remember that they can contain metadata like your location. Make sure you don't post any of them online unless that metadata has been scrubbed.

Just hang out for a while and participate and you will learn a lot. You might even make a few friends, though you may never see them in person or even learn their names.

