

**Instructions for the
Grow-It-Yourself™
Oyster Mushroom Kit**



The Grow-It-Yourself™ Oyster Mushroom Kit

How do these instructions work?

On this page and the next you will find all you need to know to start your Phoenix Oyster mushrooms growing. Further on we provide more details about each step in the process, including why we have you do it the way we do, and what alternatives you may want to try once you have enjoyed your first success. You can simply follow the instructions, but we recommend reading the whole booklet before you start.

What's in the kit?

In addition to this booklet, the kit contains these materials for preparing a container of substrate:

- Bag of mineral-supplemented sawdust pellets
- Either a container of live mushroom spawn (mycelium) or a spawn code to use to order the spawn from our website (for free). Look for the code on the last page of this booklet.

What else will I need?

- Five cups of drinkable water (see later section for more info)
- Adhesive tape for sealing the growing bag. Ordinary packing tape works fine
- At least 5 ounces of fresh 3% hydrogen peroxide solution (from a pharmacy or grocery store)
- Alcohol for sanitizing surfaces, like rubbing alcohol
- About two cups of coffee grounds from recently brewed coffee, or that were frozen shortly after brewing, drained (see later section for more info)
- Spray bottle for misting
- Scissors and/or knife

Watch video demos online at demo.TheImaginaryFarmer.com
Some of the kit details have changed, but the videos will still give you a good sense of what's involved, and they're fun to watch!

**Growing oyster mushrooms is easy once you learn how.
Good luck and have fun!**

Step-by-Step Instructions

Set up

1. Choose a clean, quiet place to work. Turn off fans, close windows, and keep others (like pets) from moving around in your work area to minimize the dust in the air. Clean your work surface and wipe with alcohol.
2. Wash your hands thoroughly with soap and water and wipe them with an alcohol-soaked paper towel or hand sanitizer to reduce contaminants.

Mix it up

1. In a half-gallon or larger container combine 5 cups of water and 5 ounces of hydrogen peroxide and set aside.
2. Squeeze the unopened spawn bag to break the spawn into small pieces — the smaller the better. This may take a little effort.
3. Cut the spawn bag open across the top, just below the seal.
4. Pour (don't mix) the remaining ingredients into the bag with the spawn, in this order:
 - coffee grounds
 - the pellet mixture
 - the water + peroxide
5. Fold or roll down the top of the bag a couple of inches, hold it closed firmly (taking care not to poke the filter patch), and shake vigorously until mixed — the more thoroughly mixed the better!
6. Use a clean, peroxide-dampened paper towel to wipe the upper part of the inside of the bag clean.

Close up the bag

1. Fold the top inch of the bag over and tape it securely, sealing it as well as possible to prevent dust or insects from getting in. Don't tape over the filter patch! Make sure you leave air space in the top of the bag for circulation.
2. Let it sit for an hour or so to let the pellets fully expand.
3. Massage it gently to shape the substrate into a loaf. Squeeze it upward a bit so it does not press too tightly against the lower part of the bag.

Watch the spawn run

Place the bag gently where it gets little or no light, some ventilation, and where you can check it easily. You will want to watch the fine, white fibers of mycelium spread through the substrate, in the phase we call the *spawn run*. You can keep it in a lighted space — like your living space — in a paper bag or box to shade it. Keep the box top open for air, though. Don't smother it in a tight space like a drawer. A temperature around 65°F is ideal, but it will do fine between 50°F and 80°F.

After about a week, examine the bag daily — the next stage happens suddenly! Look for solid, flat masses that start to thicken on the surface of the substrate. At 10–14 days after inoculation they should start *pinning*: forming tiny mushroom *pinheads*. Ideally you will want to cut an opening in the bag just as the block starts pinning.

Pinning

Choose a well-lit spot where you can observe and mist the bag. Light, ventilation, and humidity matter more than temperature; the block will fruit in a wide range of temperatures. With a clean knife make a 1 inch X-shaped cut through one of the smaller sides of the bag (don't worry about hurting the mycelium). Don't fold back the flaps of the opening; the slits will provide enough air flow. Fold the tented top portion of the bag over, squeeze all the air out, and tape it down over the side, to cut off the air flow through the filter patch.

Shade all but the open end of the bag. For example, cover it with a bag, box, or cloth to block light. Make sure the open end gets light and fresh air.

Mist or sprinkle the opening with fresh water 3–4 times a day, enough to wet it thoroughly, and watch for pinheads to form. They usually appear after 10–14 days of spawn run. Have your camera ready — they're too cute to miss! Keep misting them as they grow. Depending on temperature, they will mature in 3–10 days.

If you have dry air — a common problem during the winter heating season — consider making a humidity tent out of clear plastic to cover the opening between mistings. If you do, make sure not to seal off the kit entirely; it needs ventilation, especially near the bottom, where carbon dioxide — which is heavier than air — can collect.

Configuring your growing bag for incubation and fruiting

When you have mixed your bag of substrate stand it upright, forming a loaf or block at the bottom, with an air-filled space on top behind the filter patch. This Phoenix Oyster bag is three days old. You can see cottony growth already spreading from the individual grains of spawn.



Your block is preparing to form pinheads when the mycelium thickens into solid masses that start to thicken on the surface of the substrate. This image shows small white lumps forming, indicating it's time to cut an opening!



When your mushrooms are ready to form, encourage fruiting out the small end of the bag by cutting the side hole, then folding the top down tightly and taping it, blocking air flow through the filter patch. This way the hole provides the only source of fresh air. This Phoenix Oyster specimen fruited just over three weeks from inoculation.

Harvesting

Harvest your mushrooms when the edges of one or more of the caps in a cluster have turned upward, completely exposing the gills. Gently pull the entire cluster off the block of substrate. If you let them go much past this point they will put their energy into spore production, not into growing more edible flesh, and they will not keep as well once harvested.

Store them in the refrigerator, in paper (kraft or waxed) or cellophane bags. They will keep for a few days to a week. During this time they may dry somewhat, but will still be good to eat. In sealed containers they soften and spoil quickly.

Additional Crops

The first flush is usually the biggest by far, but if you keep the bag in the same place and keep misting the block through the opening in the bag you should see from one to three additional flushes, usually a couple of weeks apart.

Fungally Asked Questions

About the Mushroom Spawn in the Kit

Does this kit grow mushrooms or fungus?

A mushroom is the reproductive organ, or fruiting body, of a fungus. The fungus that you grow with this kit produces fruiting bodies we call phoenix oyster mushrooms.

What species of mushroom is this?

The Phoenix Oyster Mushroom's scientific name is *Pleurotus pulmonarius*. It is also known by the common names Summer Oyster and Indian Oyster, and by the erroneous scientific name *Pleurotus sajor-caju*. The particular strain in this kit we call Hantana™ Phoenix. We cloned it from a wild mushroom found on our farm, which we call Hantana.

Is this the same oyster mushroom I see at the grocery store?

Probably not. Most commercial producers grow the closely-related Pearl Oyster, *Pleurotus ostreatus*. The Phoenix Oyster has a more pungent flavor and aroma, a wider stem, a tendency toward wavy or scalloped cap edges and more reddish pigmentation. It is more delicate than and does not keep as well as the Pearl Oyster.

How can I tell if my spawn is alive and healthy?

First, the spawn bag should be intact, without holes or tears. If it is rolled up, unroll it and look through the plastic bag at the contents. The grains should look clean, with only white mycelial fibers growing on them, and possibly with a few droplets of clear pink or yellow fluid. Patches of green, gray, or black indicate contamination.

Healthy spawn of this species has a slightly anise-like, sweet aroma. If it smells sour or rotten, don't use it.

If you wish, test its viability by squeezing and shaking the bag to break the spawn into pieces, then letting it sit at room temperature, in the dark, for a couple of days. Healthy mycelium will grow and bind the grains together again. If it does not stick together after a few days, or discolors, you have a problem.

How long will my kit keep before I have to use it?

We try to deliver spawn at its peak of readiness for introduction to its new substrate. It should retain its vigor for a week or so at room temperature, longer if refrigerated. The sooner you use it, the better it will work.

About Preparing the Substrate

What does the substrate mixture contain?

This fungus digests wood, usually of dead or dying trees. The pellet mixture contains about 34 ounces/970 grams of mostly hardwood sawdust pellets, and a teaspoon each of limestone (calcium carbonate) and gypsum (calcium sulfate). You add the rest of the ingredients, as described at the beginning of the instructions.

Why so much emphasis on cleanliness?

The substrate mixture can support many kinds of fungi, like molds, which will compete with our fungus, possibly even killing it. We try to minimize the number of uninvited spores and other contaminants that get into the container. A little bit won't hurt, though — the peroxide will take care of it — which is why you don't need strictly sterile conditions.

What do the instructions mean by “drinkable” water?

Water chemistry varies from place to place. Our kit formula works best if you initially mix it using water with a neutral or somewhat alkaline pH (7 or higher) and without strong chlorination. If you have acidic water (pH under 6), or if you just don't know about your water's chemistry, we suggest using bottled drinking water instead of tap water when you mix your substrate. If you have chlorinated tap water, let it sit for a day to lose its chlorine, or use bottled water. Do not use “softened” water, which contains salt.

For misting, tap water, including chlorinated water, will work fine.

Where should I get coffee grounds? What kind of coffee?

You can save coffee grounds when you make coffee at home, or you can ask a local coffee shop to give you a couple of cups of recently-brewed grounds. Espresso or regular coffee grounds will work, even those with added flavors! If you don't know how long they've been out in the open collecting contaminants, microwave them in a covered container until thoroughly steamed, or boil and drain them. Let them cool, covered, before use.

How should I handle the coffee grounds?

Ideally you want to get freshly-used grounds. The process of making the coffee beverage — soaking the grounds with boiled water or steam — will pasteurize them. Freeze them if you can't use them right away, to keep contaminants from germinating and growing. If you need to collect coffee at home for several days to get enough, add each fresh batch to your frozen stash. Thaw them before use.

What if I can't or don't want to use coffee?

Your kit will work without it, but better with it. The coffee adds additional nutrients, in particular nitrogen, which helps the mycelium digest the wood and grow.

You could use other nitrogen supplements, but you must use ones that do not decompose hydrogen peroxide, or the peroxide will not work as well. Alternatives include soy flour, corn gluten, powdered milk, and synthetic nitrogen fertilizers for plants. The proportions to use vary. We suggest consulting mycomasters.com for more information on this topic.

What does the peroxide do?

Using hydrogen peroxide in the right concentration keeps spores from germinating, providing a defense against contamination, while allowing the live mycelium to grow.

Why doesn't peroxide harm the mycelium?

Fungi can cope with a certain amount of peroxide in their substrate if they have gotten used to it. The spawn we include in the kit was raised using peroxide so it doesn't mind having some peroxide in its new substrate. We call it peroxide-conditioned spawn. If you used unconditioned spawn, the peroxide in the mixture would kill some or possibly all of it.

About the Growing Bag

Can I use a thermal food storage sealer instead of tape to seal the growing bag?

Yes, you can seal the growing bag with a heat sealer.

How does the plastic growing bag work?

The bag has a filter patch that keeps out contaminant particles but lets gases pass, so the fungus gets air. These polypropylene bags are reusable, but unfortunately not recyclable.

About Pinhead Formation

How do I know the mycelium block is ready to form pinheads?

For the first week or so the mycelium looks like cotton fibers spreading through the substrate. Then it will start forming solid masses on the surface of the block. This primordial tissue will start rising from the surface in lumps, then form tiny mushroom starts we call pinheads. If pinheads form before you notice, you should cut an opening right away.

Why cut such a small opening for such big mushrooms?

A small opening reduces moisture loss and minimizes exposure to contaminants and insect pests. It also creates a single cluster of large mushroom caps which you can easily harvest as a unit. If you cut a larger opening you will get more, but smaller, caps.

Why cut the bag open before pinheads form?

The block will tend to form pinheads in the presence of fresh air, light, and moisture. By creating an opening early you encourage the block to form mushrooms where you want them.

What happens if pinheads form before I cut the opening?

You can still cut an opening where you want mushrooms to emerge, but we suggest instead cutting a small opening where some pinheads have already formed, so they don't go to waste. If you have lots of little pinheads, you should still pick a single spot for the opening rather than trying to release them all. It sounds cruel, but remember that the block acts as a single organism, of which each pinhead is a tiny part.

My pinheads weep droplets of clear pinkish fluid. Is that OK?

Yes, normal, healthy pinheads do this. It diminishes as they mature.

My pinheads keep growing longer but don't form caps or gills.

This happens most often because the air around them has too much carbon dioxide. Fungi absorb oxygen and give off carbon dioxide, so without ventilation it will build up.

First, they need to get out of the bag to breathe. If they are growing out of the bag but still don't widen into caps, you have a ventilation problem. Don't keep the block in a container that only ventilates at the top, like a bucket or a fish tank. Carbon dioxide is heavier than air so it pools in containers. Poorly-ventilated rooms, especially basements, can fill with carbon dioxide from the mushrooms as well as from people, pets, and gas appliances.

About Harvesting, Cooking, Storing Mushrooms

How do I know the mushrooms are ready to harvest?

The caps start with edges curled down. As they mature they stretch upward, exposing more of the gills, which produce the spores. When one or more of the caps in a cluster has raised its edge until almost straight, the whole cluster is ready to harvest.

Should I cut the mushrooms at the base to harvest them?

No, gently twist the cluster off the block. They usually come with a little bit of sawdust substrate attached to the stem butt, which you need to trim off before cooking them.

How should I store the mushrooms?

Store them in the refrigerator, in paper (kraft or waxed) or cellophane bags. They will keep for a week or two. During this time they may dry somewhat, but will still be good to eat. In sealed containers they soften and spoil faster.

To freeze, first slice and sauté. You can also dry them in a dehydrator.

How should I cook the mushrooms?

You can fry (sauté), roast, or grill oyster mushrooms. You almost always sauté them before using them in dishes like mushroom soup, mushroom risotto, mushroom sauce for pasta, and the like.

How do I cut the mushrooms to cook them?

The entire oyster mushroom, cap and stem, is good food, so take full advantage of both. You can chop them into small pieces for things like mushroom burgers and stuffings. Or slice them the long way, from center of the cap edge to the end of the stem, making long, flat slices that fry evenly. We use these to make "mushroom bacon," fried in oil or butter until brown and slightly crisp on each side. They're great as a breakfast side dish, over pasta with marinara sauce, on a salad, or in a sandwich.

About Getting More Out of Your Kit

Can I start another container of substrate with the block when it's finished?

Yes. Your chances of success depend on how healthy and contaminant-free the block is, your choice of containers and substrate, and other factors. We recommend not using it to start new containers of substrate indoors but to inoculate an outdoor bed like a compost heap or bed of straw and/or hardwood chips supplemented with coffee grounds.

If the block has stopped fruiting can I restart it by putting it outside?

You can take the block out of the bag and put it outside on the ground in the shade. It will usually revive and fruit once or twice more. Be alert for pests, though; fungus gnats and slugs love this mushroom and will ruin them if you let them.

What other factors should I consider for growing this mushroom outside?

You should let your block incubate in the shelter and shade of a building, but for pinning and fruiting the mushroom will enjoy the open air during the growing season. In the wind and heat you will need to water the bag frequently, spraying it with a hose or using a watering can. Keep it out of direct sun. Watch for pests. To prevent fungus gnats, use an emulsion of Neem oil or commercial preparation of the neem-derived insecticide azadirachtin at least once a week. If bugs are a problem, try keeping the bag on a screened-in porch or indoors by a screened window where it can enjoy fresh air without the bugs.

Can I use a GIY kit to grow sawdust spawn to inoculate additional substrates?

Yes! Just omit the coffee grounds and take special care to avoid contaminants. The mycelium will still tend to start fruiting in about 10 days, so use the colonized substrate as spawn before that starts. It will make about 5 lbs of spawn, about a gallon in volume, which can inoculate 8-10 times its weight in new substrate.

Can I grow other mushrooms the same way?

The basic process applies to many other mushroom species, but each has its own special needs. Don't we all?

Good luck!

To get fresh, healthy spawn to “seed” your substrate, just redeem this unique spawn code at our website — it’s free, including shipping.



1. Send your web browser to: **hp.SpawnFarm.com**
2. When the spawn offer page appears, click the “Add to Cart” (or “Add to shopping bag”) button.
3. Type the code in the “Coupon Code” box and click “Go!”
4. Your Grand Total will come to \$0.00. Proceed to Checkout.
5. Finish checking out and your spawn will soon be on its way!

If you have any problems anywhere along the way, contact us. We’ll make it work!



**For more information visit
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