

Build an Oyster Mushroom Grow Jar

This is a fun activity for people of all age groups to grasp the basics of fungi life cycle and mushroom growing with common resources and waste products. This is also an effective and convenient way to make your own mushroom spawn.

YOU WILL NEED:

- Oyster mushroom grain spawn or sawdust spawn
- Clean corrugated cardboard (*cardboard manufacturers from the United States, Europe, and Canada are required to use soy-based ink and non-toxic glue so try to use cardboard made in these countries or areas*)
- A bucket or container to soak cardboard in
- One quart mason jar
- Tools to make a small hole on the jar lid
- 70% rubbing alcohol

STEPS:

1. Soak clean cardboard in warm water (*120-140 degrees F*) for an hour. Don't worry too much if you soaked the cardboard for two hours or the water was a bit warmer or cooler.
2. Drain off excess water from the cardboard so it's moist but not dripping wet. In the meantime, clean the inside of the jar with 70% rubbing alcohol, and drill a small (*3/16 inch*) hole on the lid.

Alternatively, you can reuse takeout containers, yogurt containers, tupperwares, or experiment with other containers at hand!

3. Inoculate the cardboard in lasagna style with alternating layers of cardboard and spawn. The ripple layer in the corrugated cardboard works best for their ability to allow air exchange. Lay down a thin layer of moist cardboard at the bottom of the jar, spread a small handful of spawn on the top, and repeat. When we make the grow kit in a jar, we like to fill the container halfway. This way it's easy to observe the growths of mycelium and you can use the container as a mini fruiting chamber later.

4. Close the jar with the modified lid and keep it in a dim area at room temperature (65-75 degrees F). Complete darkness is not always necessary. We like to keep the grow jar on the desk or bookshelf. It's inspiring to watch mycelium grow everyday!

5. In 3-4 weeks, the cardboard should be mostly covered by white mycelium. You will start noticing some tiny grey pins forming on the top. Those are baby mushrooms. Now you're ready to fruit the mushrooms.

If you'd like to expand your cardboard spawn, do so before the mycelium starts fruiting. Just replace the grain or sawdust spawn in step 3 with your very own cardboard spawn. The rest of the process is mostly the same. Also try bigger containers like a larger tupperware or a 5 gallon bucket.

6. To facilitate the mushroom growths, move the grow jar to a well lit spot but stay out of direct sunlight. Open the jar to allow an increased amount of fresh air. If your room is very dry, which is often the case during seasons when heat is on, you can make a humidity tent to cover the grow jar. To make a simple humidity tent, grab a loosely

fitting plastic bag and poke enough 1/4 inch holes to allow air flow. Mist inside of the tent at least twice a day.

Alternatively, you can build a simple fruiting chamber for your mushrooms using a clear plastic storage tote. Drill plenty of 1/4 inch holes on the lid and four sides to allow air exchange. Fill the bottom of the tote with a few inches of soaked coarse perlite to help hold moist inside the container. You can find coarse perlite at many garden stores or gardening section of hardware stores.



7. Pay close attention to baby mushrooms and keep monitoring humidity and air flow. Under proper conditions, baby mushrooms can double in size each day. Within 3-7 days, you will be ready to harvest your mushrooms. Be sure to harvest before the mushroom caps flatten out.

8. After you harvest the mushrooms, you have two choices:

- Add the spent mushroom soil to compost or mix it into garden soil. It's a great way to enrich soil biodiversity!
- Close the jar again with the lid and let it rest for a week. After that, spray inside of the jar at least once a day until mushroom pins appear again. At this point, refer back to step 6 and continue from there until you harvest the mushrooms. Fruit from the grow jar 2-3 times by repeating the entire process.

COMMON QUESTIONS:

The cardboard is all covered by white mycelium but no mushroom is coming out.

What should I do?

It takes about 3-4 weeks at room temperature (*65-75 degrees F*) for the grow jar to start fruiting mushrooms. Watch out for small grey pins. They are very tiny initially. So pay close attention. If no mushroom pins are forming, move on to step 6 to adjust the surrounding conditions to send signals for mycelium to start fruiting.

My mushrooms grow really long stems. Is that normal?

Leggy mushrooms indicate a lack of oxygen - the mushrooms are trying to reach their necks long for fresh air! Open the jar more often to let in fresh air. If you're using a humidity tent, make sure you poke enough holes on the tent. In the meantime, don't forget mushrooms also need a moist environment to grow. It's a balance!

Does the grow jar release any spores while growing?

Mycelium doesn't produce spores. Spores are the microscopic reproductive elements that mushrooms release as they mature. Sporing is a natural process but may cause allergic reaction to some mushroom growers. Harvesting mushrooms in their younger stages will reduce the overall spore load.

What are the green spots in my grow jar?

Healthy mycelium is white. If you see pink, green, black spots in the substrate (i.e. the inoculated cardboard), it's a sign that your fungus is joined by other microorganisms that often already exist in the air, water, or the substrate. There are often considered contaminations. We like to consider this a learning opportunity. Just watch how microbes fight or co-exist. If the other microbes take over and your mycelium doesn't survive, you can compost the substrate.

Can I eat the mushrooms growing out of the cardboard?

Cardboard manufacturers in the United States, Europe, and Canada are required to use soy-based ink and non-toxic glue. Cardboards made in these areas are generally safe. Avoid glossy paper and cardboard with packing tape residue. This said, we recommend this activity for mostly educational purposes. If you plan to consume the mushrooms from the grow jar (or any bought mushrooms), always cook them thoroughly first.