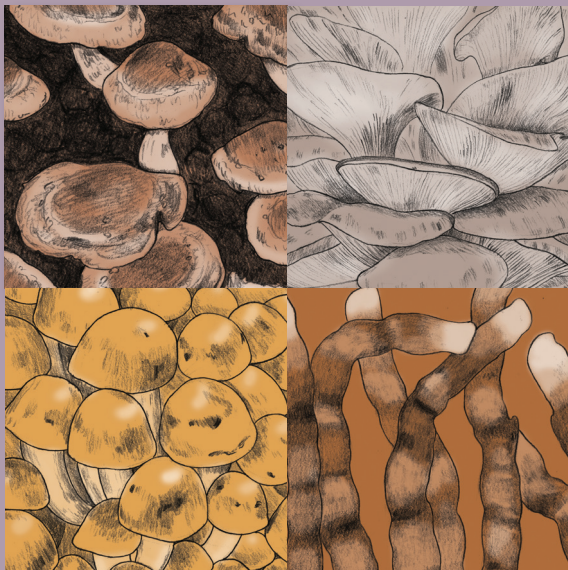


FRUITING BLOCK KIT

INSTRUCTION BOOKLET



**NORTH SPORE**

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ENVIRONMENTAL CONDITIONS

For the majority of mushroom species, all that is needed to initiate fruiting is a change in environmental conditions. Fresh air, humidity, light and temperature are the environmental changes that trigger fruiting from fully colonized substrates.

FRESH AIR

Like humans, mushroom mycelium exhales CO₂ and inhales oxygen. It will also suffocate if not given plenty of fresh oxygen-rich air to breathe. When mycelium is colonizing a substrate, the CO₂ concentration surrounding it is very high. As the mycelium reaches the edge of the substrate, it senses a lower CO₂ concentration which signals it to produce mushrooms. Sufficient fresh air exchange in your growing environment is essential as the mycelium must sense this lower CO₂ concentration (and therefore higher oxygen concentration) in order to trigger growth of the mushrooms.

HUMIDITY

The mushroom fruitbody you are trying to grow is primarily composed of water. For this reason mycelium will wait until rainfall or humid conditions to produce mushrooms. This is why proper moisture content within your substrates and a humid growing environment are essential for high mushroom quality and yield. Even short dry spells can cause mushrooms to abort their growth.

Fruitbody development typically requires less humidity than primordia formation. We recommend dropping humidity levels by 5-10% after pins have formed on your fruiting blocks.

LIGHT

Unlike plants, mushrooms don't use light as an energy source to grow, but they do need some light to grow properly. Mycelium uses light to sense it is at the edge of its growing substrate and that it is a suitable environment to produce mushrooms, similar to how a decrease in CO₂ at the edge of a growing substrate is a trigger for fruitbody development.

It is commonly believed that mushrooms prefer to grow in the dark. If actually placed in complete darkness mushrooms may never fruit, and those that do will grow elongated or misshapen and won't develop the color typical of their species. Mushrooms tend to grow in darker places not because they don't need light, but because those places tend to have more ambient moisture.

Indirect light from a window or artificial lighting can be used. If you use artificial lighting, we recommend it be on for 12 hours a day, and a digital timer can assist in automating this process.

TEMPERATURE

In natural conditions, many mushrooms fruit in response to seasonality, using a cold snap to know the growing season is coming to an end and there is a limited amount of time to produce mushrooms. Because of this, the majority of mushrooms grow better in relatively cooler temperatures, but this is somewhat species dependent. When cultivating mushrooms indoors, the ambient temperature of your setting is an important variable to consider.

The fruiting range for most mushrooms lies somewhere between 60-80 degrees, with some exceptions. It is a good idea to select species that have fruiting ranges closer to the temperatures you can provide if your options are limited.

INTERACTIONS

Environmental factors influence one another and have an effect on your growing conditions, and knowing some of these interactions can be helpful in dialing in optimal conditions.

When you are growing in higher temperatures, your mushrooms will grow faster and therefore have an increased rate of CO₂ production. In this instance we recommend an increase in ventilation. Higher temperatures hold more humidity, but you might find that after increasing your fresh air exchange you need more humidity in order to maintain the correct levels.

Colder temperatures require less ventilation, as less CO₂ is produced, but cooler air also holds less humidity and will therefore require more humidification.

BLUE OYSTER

Pleurotus ostreatus

DIFFICULTY
Beginner

HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
Mid-range,
55-75

CO2 SENSITIVITY
<1,000 ppm

GROWTH
Fast,
1-2 weeks

CROPS
2-3



HOW TO INITIATE FRUITING

Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top. Can also be side fruited.

SPECIAL CONSIDERATIONS

Prone to forming long stems and small caps when CO2 levels are too high. Cooler temperatures and more light will produce a more pigmented blue cap.

HARVEST NOTES

Harvest young, when edges of caps are still slightly turned under, less spores will be produced and shelf life will be extended.

FLAVOR

Pleasant aroma and perhaps the most delicious and unique tasting oyster. Stems are less tender than other oysters. Very meaty and can replace button mushrooms in most recipes. All oysters can develop a viscous texture if undercooked. We recommend cooking until their liquid has cooked off and they begin to brown.

ITALIAN OYSTER

Pleurotus djamar

DIFFICULTY
Beginner

HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
High-range,
65-75

CO2 SENSITIVITY
<800 ppm

GROWTH
Fast,
1-1.5 weeks

CROPS
1-2



HOW TO INITIATE FRUITING

Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top.

SPECIAL CONSIDERATIONS

Forms clusters of larger but fewer mushrooms than other oyster species. Tolerant of wide temperature range. More prone to blotch (dark spots on the fruiting bodies) when grown in warmer temperatures.

HARVEST NOTES

Harvest when edges begin to frill. Best harvested slightly young in order to extend shelf life. New fruits will form where others have been previously harvested.

FLAVOR

Aroma can be likened to anise or licorice. Very versatile and considered one of the finest culinary oyster mushrooms. All oysters can develop a viscous texture if undercooked. We recommend cooking until their liquid has cooked off and they begin to brown.

GOLDEN OYSTER

Pleurotus citrinopileatus

DIFFICULTY
Beginner

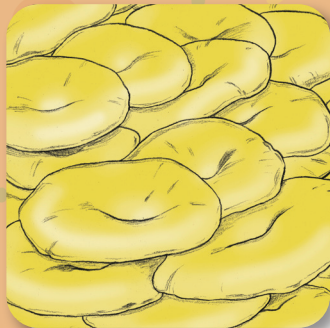
HUMIDITY
primordia
98-100,
fruitbody
88-95

TEMPERATURE
High-range,
65-80

CO2 SENSITIVITY
<1,000 ppm

GROWTH
Fast,
1-1.5 weeks

CROPS
2



HOW TO INITIATE FRUITING

Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top. Can also be side fruited.

SPECIAL CONSIDERATIONS

Will not grow in temperatures less than 65 degrees, best grown in the summer in temperate regions. Exposing the mushrooms to more light will produce a more pigmented cap. Delicate and therefore best suited for the farmer's market as it is prone to breaking in shipping.

HARVEST NOTES

Harvest right before the caps flatten out, remove entire cluster with care to minimize breaking. Short shelf life.

FLAVOR

Sweet and fruity aroma, sometimes like melon. When cooked they are meaty and a bit nutty. All oysters can develop a viscous texture if undercooked. We recommend cooking until their liquid has cooked off and they begin to brown.

PINK OYSTER

Pleurotus djamor

DIFFICULTY
Beginner

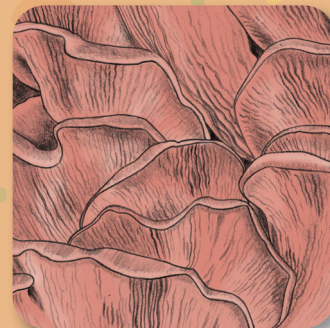
HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
High-range,
70-80

CO2 SENSITIVITY
500-1,000
ppm

GROWTH
Fast,
1-2 weeks

CROPS
2



HOW TO INITIATE FRUITING

Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top. Can also be side fruited.

SPECIAL CONSIDERATIONS

Exposing the mushrooms to more light will produce a more pigmented cap. Once in a great while, a pink oyster block will produce mushrooms with little to no pigmentation despite sufficient light levels.

HARVEST NOTES

Recommend harvesting a little young, when edges of caps are still slightly turned under. Short shelf life as it spoils quickly.

FLAVOR

Meaty taste and texture is a little more pronounced than in other oyster mushrooms. Cooked until crisp, they make a good bacon substitute. All oysters can develop a viscous texture if undercooked. We recommend cooking until their liquid has cooked off and they begin to brown.

SNOW OYSTER

Pleurotus ostreatus

DIFFICULTY
Beginner

HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
Low-range,
45-65

CO2 SENSITIVITY
<1,000 ppm

GROWTH
Fast,
1-2 weeks

CROPS
1-2



HOW TO INITIATE FRUITING

Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top. Can also be side fruited.

SPECIAL CONSIDERATIONS

Best grown in the winter in temperate regions. Prone to discoloration and/or blotch (dark spots on the fruiting bodies) when grown in warmer temperatures.

HARVEST NOTES

Harvest when edges of cap are still slightly turned under. Remove clusters with care as caps can be brittle. Can be harvested young to extend shelf life.

FLAVOR

Sweet and pleasant aroma. Similar to the Italian oyster in texture but with a smaller stem. All oysters can develop a viscous texture if undercooked. We recommend cooking until their liquid has cooked off and they begin to brown.

REISHI

Ganoderma lucidum

DIFFICULTY
Beginner

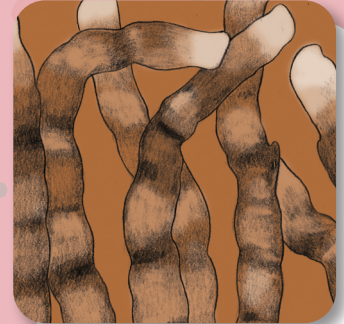
HUMIDITY
antler
95-100,
fruitbody
85-95

TEMPERATURE
High-range,
65-80

CROPS
1

CO2 SENSITIVITY
Antler
20,000-
40,000 ppm,
fruitbody
<2,000 ppm

GROWTH
Slow, 1-2
months for
antlers, plus
2 months for
conk
formation



HOW TO INITIATE FRUITING

Do not open the bag of your reishi. Reishi needs the high humidity and CO2 environment in order to form antlers. Put in a spot with ambient light and rotate occasionally until ready to harvest. If conk formation is desired, open the top of the bag and place within a fruiting chamber. We recommend starting this process when the antlers are greater than 4" in height.

SPECIAL CONSIDERATIONS

Greater risk of contamination when opened and put in fruiting chamber because of the slow growth rate.

HARVEST NOTES

Mushrooms can be harvested by twisting the base and then trimming away any substrate and dried in the open air.

FLAVOR

Not for culinary use, but recommended for teas and tinctures. To make tea, break reishi into pieces and simmer in water for two hours. Has a bitter, earthy flavor.

LION'S MANE

Hericium erinaceus

DIFFICULTY
Beginner

HUMIDITY
primordia
90-95,
fruitbody
80-90

TEMPERATURE
Mid-range,
55-70

CO2 SENSITIVITY
primordia
500-700 ppm,
fruitbody
<1,000 ppm

GROWTH
Moderate,
1.5-2 weeks

CROPS
2



HOW TO INITIATE FRUITING

Making small holes in the plastic encourages even growth which can be harvested easily and cleanly. We recommend cutting 3-4 small X's on one plane of the bag. Can be top or side fruited depending on preference; side fruiting can encourage elongated spines. Lion's mane is prone to fruiting within the bag before being exposed to air; do not cut your holes where these fruits have begun to form.

SPECIAL CONSIDERATIONS

Avoid direct moisture and excess humidity to prevent rot.

HARVEST NOTES

Mushrooms should be harvested after teeth have formed but before they elongate. Good shelf life, will begin to yellow as they dry out.

FLAVOR

Flavor and consistency similar to crab. Can be used as a substitute for crab and lobster in recipes.

BLACK KING

Pleurotus sp.

DIFFICULTY
Intermediate

HUMIDITY
primordia
90-95,
fruitbody
80-90

TEMPERATURE
Mid-range,
55-70

CO2 SENSITIVITY
<800 ppm

GROWTH
Moderate,
2-3 weeks

CROPS
1-2



HOW TO INITIATE FRUITING

Slow to pin and therefore will benefit from a cold shock. Place the bagged block in the refrigerator for approximately eight hours. Make a small cut at the top of the bag under the seam and place upright in your fruiting chamber. Allow the block to pin within the bag. Once the pins are about 2" tall, cut off the top of the bag under the seam.

SPECIAL CONSIDERATIONS

Hybrid of oyster and king trumpet, meaty but easier to grow than the latter. If you notice blotch (dark spots on the fruiting bodies) excess humidity or direct moisture is likely the cause.

HARVEST NOTES

Best harvested right before the caps flatten out. Good shelf life.

FLAVOR

Umami flavor with a slight sweetness. One of the meatiest cultivated varieties and a great meat substitute. Prepare mushroom steak, scallops or shred like pork.

KING TRUMPET

Pleurotus eryngii

DIFFICULTY
Intermediate

HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
Mid-range,
50-65

CO2 SENSITIVITY
primordia
high CO₂,
keep in bag,
fruitbody
<2,000 ppm

GROWTH
Moderate,
2-3 weeks

CROPS
1-2



HOW TO INITIATE FRUITING

Make a small cut at the top of the bag under the seam and place upright in your fruiting chamber. Allow the block to pin within the bag. Once pinning has occurred cut off the top of the bag, leaving sidewalls approximately 4" tall. If slow to pin, place the bagged block in the refrigerator for approximately eight hours before returning to the fruiting chamber.

SPECIAL CONSIDERATIONS

Produces less spores than other oyster species because of the short gills. If you notice blotch (dark spots on the fruiting bodies) excess humidity or direct moisture is likely the cause.

HARVEST NOTES

Best harvested right before the caps flatten out. Good shelf life.

FLAVOR

Savory, meaty cap, and stem. Can be prepared in many different ways. Excellent sliced, marinated, and grilled or roasted.

CHESTNUT

Pholiota adiposa

DIFFICULTY
Intermediate

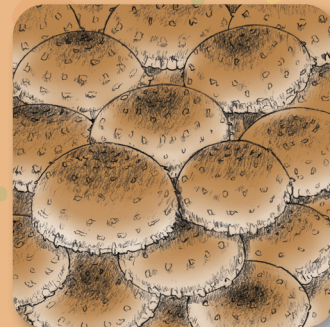
HUMIDITY
primordia
98-100,
fruitbody
88-95

TEMPERATURE
Mid-range,
60-70

CO2 SENSITIVITY
primordia
500-1,000
ppm,
fruitbody
<1,000 ppm

GROWTH
Moderate,
2-3 weeks

CROPS
2



HOW TO INITIATE FRUITING

Wait until the block begins to turn orange within its bag before initiating fruiting. Tightly fold excess plastic back and place block face up. Slice diagonally or cut X across entire top. Can also be side fruited.

SPECIAL CONSIDERATIONS

Can be slow to grow a second flush. Color will transfer to lighter colored mushrooms if packaged together.

HARVEST NOTES

Harvest before the veil breaks in order to prolong shelf life, caps will still be cupped. Short shelf life if harvested when the caps have flattened out.

FLAVOR

Full flavor that is evoked with thorough cooking. We recommend you use its rich, nutty flavor as a compliment to autumn soups.

SHIITAKE

Lentinula edodes

DIFFICULTY
Intermediate

HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
Mid-range,
55-70

CO2 SENSITIVITY
<1,000 ppm

GROWTH
Moderate,
1.5-2 weeks
once the
block has
been placed
in the fruiting
chamber

CROPS
2-4



HOW TO INITIATE FRUITING

The block should be given time to brown in its bag at room temperature before fruiting is initiated, about 1-2 months from date of production depending on storage temperature. Once the block is mostly brown, place the sealed block in the refrigerator for at least 48 hours. Remove the block from the bag and soak the block in cold water for approximately 4 hours before placing it directly on a shelf within your fruiting chamber.

SPECIAL CONSIDERATIONS

Can be prone to *Trichoderma* (green mold), spray affected areas of block with hydrogen peroxide 3%.

HARVEST NOTES

Harvest just before the caps flatten. Trim flush with the block so no stem remains on the block before subsequent fruitings.

FLAVOR

Meaty texture when cooked. Good for drying and reconstituting in winter soups.

PIOPPINO

Agrocybe aegerita

DIFFICULTY
Advanced

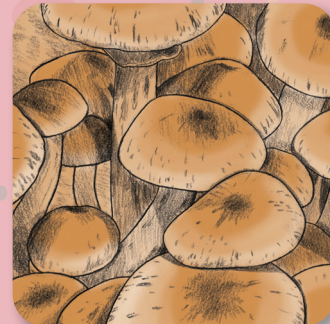
HUMIDITY
primordia
95-100,
fruitbody
85-95

TEMPERATURE
Mid-range,
55-65

CO2 SENSITIVITY
<2,000 ppm

GROWTH
Moderate,
2-3 weeks

CROPS
2



HOW TO INITIATE FRUITING

Make a small cut at the top of the bag under the seam and place upright in your fruiting chamber. Allow the block to grow pins within the bag. Once pinning has occurred cut off the top of the bag leaving sidewalls approximately 4" tall.

HARVEST NOTES

Harvest when first veil breaks. Remove entire cluster with care to minimize breaking and then trim away substrate. Shelf life can be prolonged by harvesting your pioppinos early, before the veil breaks.

FLAVOR

Mild earthy and nutty flavor. Firm cap and stem that develop a crisp and crunchy texture when cooked. Pairs well with full flavors.

NAMEKO

Pholiota nameko

DIFFICULTY
Advanced

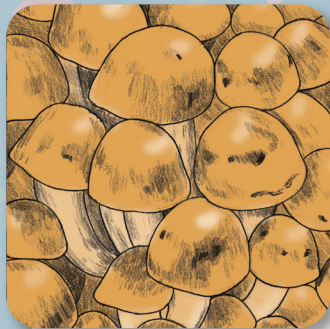
HUMIDITY
primordia
98-100,
fruitbody
88-95

TEMPERATURE
Low-range,
45-65

CO2 SENSITIVITY
primordia
500-1,000
ppm,
fruitbody
<1,000 ppm

GROWTH
Moderate,
2-3 weeks

CROPS
2



HOW TO INITIATE FRUITING

Cut off the top of the bag, leaving sidewalls approximately 4" tall. If slow to pin, disturb the top 1/4" of the mycelium by using a clean tool such as a knife or wire brush to scratch the surface.

SPECIAL CONSIDERATIONS

Sensitive to moisture and CO₂, be sure the surface is always kept moist or the primordia will be at risk of aborting.

HARVEST NOTES

Harvest before the caps open. Remove entire cluster with care to minimize breaking and then trim away the substrate.

FLAVOR

Aroma that walks the line of being both fruity and earthy. Gelatinous cap that can thicken soups and sauces. A standard ingredient in miso soup.

SPECIES COMPATIBILITY

With some compromise, many different species of mushrooms can be grown together. Consider first, the temperature range of the mushrooms you desire to grow and second, consider the CO₂. Humidity ranges overlap for the majority of species. We encourage you to experiment with many different groupings!

HARVESTING

Unlike plants, mushrooms grow incredibly fast and over the course of a single day can reach and exceed their peak harvest time. Make sure to keep a close eye on your mushrooms so you don't miss the opportune time to harvest!

Looking for a few key indicators will help you determine when your mushrooms are ready to harvest. The general rule is that mushrooms should be harvested before their caps flatten or become concave. For mushrooms with a veil, when it just begins to break.

To harvest, reach your hand around the base of the mushroom cluster and twist. This motion should be enough to pop your mushrooms off the block. You can also use a knife or scissors if you prefer. Be sure to remove all of the fruiting body remaining on the block down to the myceliated sawdust to prepare for a second fruiting and prevent rotting and possible contamination.

A single mushroom can release billions of spores a day. Harvesting your mushrooms at the ideal time will not only prolong the life of the mushrooms, but also any fan and filters you use within your growing environment.

TROUBLESHOOTING

Growing mushrooms typically involves some trial and error. Although their basic needs are the same, they vary slightly from species to species and within different growing environments. Even veteran growers take time to dial in the successful fruiting of species new to them.

On these pages you will find some of the more common problems you may run into and what adjustments you might make to grow a successful flush, or get it right the next time around!

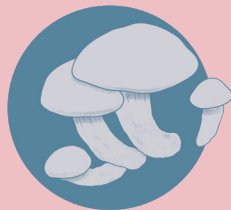
TROUBLESHOOTING CONT.

FUZZY STEMS

PRIMARY CAUSE: Excessive CO₂ and/or moisture

POSSIBLE SOLUTION:

- Increase your fan speed or clean your filter to increase fresh air exchange.
- Lower the humidity setting.



BROWN OR CRACKED CAPS

PRIMARY CAUSE: Not enough humidity, harvested too late

POSSIBLE SOLUTION:

- Increase the humidity setting.
- Harvest your mushrooms earlier.



PALE FRUITING BODIES

PRIMARY CAUSE: High temperature and/or low light environment

POSSIBLE SOLUTION:

- Relocate your tent to a cooler location.
- Relocate your tent so it is within close proximity to ambient light or use artificial lighting.



ELONGATED STEMS AND UNUSUAL GROWTH

PRIMARY CAUSE: High CO₂

POSSIBLE SOLUTION:

- Increase your fan speed or clean your filter to increase fresh air exchange.

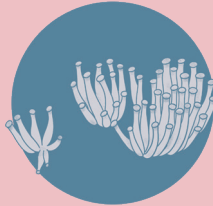


GROWTH STOPPED AFTER PINNING

PRIMARY CAUSE: Aborted growth due to low humidity or a temporary drop in proper humidity

POSSIBLE SOLUTION:

- Increase the humidity setting.
- Keep an eye on the water level in your humidifier to ensure it doesn't run out by monitoring the blue gauge on the right side of the unit.



NO GROWTH

PRIMARY CAUSE: High CO₂, high temperatures, substrate wasn't fully colonized, substrate too dry (more common with shiitake blocks)

POSSIBLE SOLUTION:

- **PATIENCE:** Sometimes all your block needs is more time. Not all species of mushrooms will begin to grow within two weeks of being placed within your BoomRoom. If the block is not fully colonized it will take longer to fruit as it will not begin to do so until it has colonized through the entire substrate.
- **SOAKING:** Keep your block in its bag and submerge, often a weight is needed to keep the block under the water. Most species only require a soak of about 20 minutes, after which you can drain the water out of the bag and place it back in your BoomRoom. Keep an eye on the block while it soaks. Most blocks are dense enough that they will stay intact, but species with a more wispy mycelium, such as lion's mane, are vulnerable to breaking apart if left to soak for too long!
- **COLD SHOCKING:** Put your blocks in refrigeration temperatures (approximately 40°F) overnight or up to 24 hours. This step is especially helpful if you are growing shiitake or other late season mushrooms.
- **RELOCATING:** If the temperature where your BoomRoom is located is too high some species of mushrooms may not fruit. Try relocating your BoomRoom to a cooler area.

GLOSSARY OF TERMS

Fruitbody A fully grown mushroom, the reproductive structure of the organism in which the spores are produced.

Flush A crop of mushrooms.

Mycelium The vegetative part of a fungus, consisting of a network of fine filaments (hyphae).

Primordium (plural: primordia) The earliest recognizable stage of fruitbody development. Also known as baby mushrooms.

Pinning When baby mushrooms (primordia) begin to emerge from the substrate.

Side fruiting Mushrooms grown from the side of the substrate, as if from a tree.

Substrate A medium that provides energy and nutrition through which mycelium can grow and from which a mushroom can subsequently fruit.

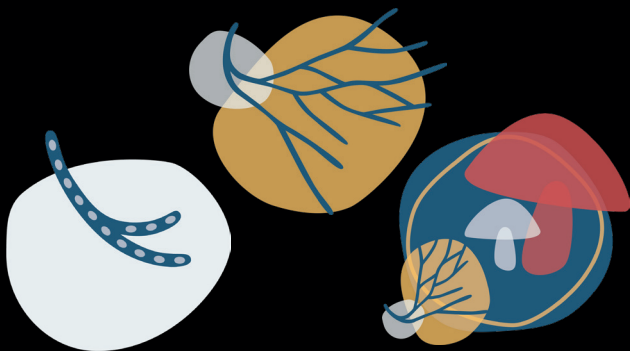
Top fruiting Mushrooms grown from the top of the substrate, as if from the ground.

SPORE REWARDS

We want to give back to you, as a thank you for choosing to take your mushroom journey with us. So we set up our Spore Rewards program! As a member you'll be able to save on all of your regular purchases, get special perks, and you can help us bring more folks into the mycological fold.

Ready to dive in? Find out more and sign up at:

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NORTHPORE