

# SHROOMTEK INJECT & GROW INSTRUCTIONS



NORTH SPORE

## 1. GATHER YOUR MATERIALS

READ THROUGH ALL OF THE INSTRUCTIONS BEFORE YOU BEGIN TO GAIN A BETTER UNDERSTANDING OF THE ENTIRE PROCESS.

### You will need:

- ShroomTek
- Nitrile or latex gloves laboratory gloves
- Spray bottle of 70% isopropyl alcohol
- Spray bottle of previously boiled or distilled water
- Scissors or a utility knife
- A rubber band
- Spore syringe or liquid culture
  - Note: If your spore syringe or liquid culture has been stored in refrigeration, take it out several hours before you intend to use it.
- Kitchen paper towels (optional)
- Alcohol wipes (optional)
- Alcohol burner (optional)
- Still air box such as NocBox or flow hood (optional)
- Fruiting chamber such as a BoomRoom or monotub (optional)

## 2. SANITIZE YOUR MATERIALS AND WORKSPACE

For best results work in a still air box such as the NocBox or in front of a flow hood. If you do not have access to either, any well-cleaned space can be used but contamination is more likely.

- Choose a location with little air movement, shut windows, and doors, turn off any heating or cooling units, and choose a work surface you can sanitize with isopropyl alcohol.
- Begin by sanitizing your work surface and ShroomTek bag with 70% isopropyl alcohol. Let sit on surfaces until dry or for several seconds before wiping dry with a clean paper towel.
- Lastly, put on gloves and clean with isopropyl. (Fig. 1)

Fig. 1



## 3. INJECT YOUR SHROOMTEK

NOTE: It is best practice to wait a minimum of one week after arrival before injecting ShroomTek bags to ensure they were not compromised during transit. Rest assured that your purchase is 100% guaranteed. If your bag was compromised, we will replace it.

- Prepare your spore or culture syringe for use according to the manufacturer's instructions.
  - NOTE: The needle comes sterile but subsequent use of the culture or spore syringe will require sterilization of the needle as well. Sterilize the needle with alcohol or flame sterilize with an alcohol burner or lighter. If using a flame to sterilize, the tip of the needle should be heated until it glows red and then allowed to cool before injection. Do not use an open flame or alcohol burner in a still air box such as the NocBox.
- Repeat sanitization of the injection point with 70% isopropyl alcohol or an alcohol wipe.
- If the culture doesn't look uniform you may shake it for a few seconds to disperse the mycelium or spores.

**Fig. 2**



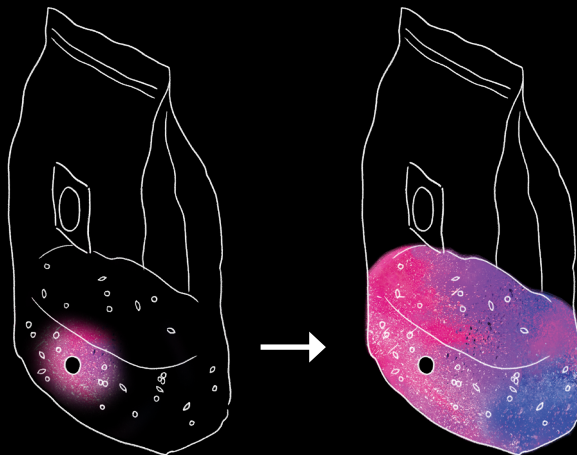
**d.** Remove the needle cap and insert the sterile needle through the injection point. Use 2.5-5 ccs per ShroomTek bag. (Fig. 2)

## 4. STORAGE AND COLONIZATION

**a.** Allow your bag to colonize undisturbed and out of direct sunlight. Temperature for incubation shouldn't exceed 75 degrees F or dip below 55 degrees F. Keeping your bag at the higher end of the temperature range will encourage faster colonization.

**b.** After a couple of weeks, you should start to see mycelium growing on the substrate. You'll notice the white mycelium growing outward from the injection point. When it has grown three to four inches, without opening the bag, carefully break up the colonized substrate and mix it into the uncolonized substrate. This will dramatically speed up the colonization process.

**c.** Your spawn is ready to use when the bag is completely white with mycelium. This may take a couple of weeks to a month or more depending on the species and vigor of your culture.



## 5. INITIATE FRUITING

**AFTER YOUR BAG HAS COLONIZED YOU ARE READY TO INITIATE FRUITING. SHROOMTEK IS DESIGNED TO HELP YOU ACHIEVE THE PROPER ENVIRONMENTAL CONDITIONS FOR OPTIMAL MUSHROOM GROWTH. IF YOU ARE A BEGINNER, WE RECOMMEND FRUITING WITHIN THE BAG.**

**IF YOU CHOOSE TO USE AN ALTERNATIVE FRUITING CHAMBER SUCH AS A BOOMROOM OR MONOTUB, REFER TO THE INSTRUCTIONS AT THE END OF THE BOOKLET BEFORE YOU BEGIN.**

**a.** Sanitize your workspace, scissors, or utility knife and ShroomTek bag with 70% isopropyl alcohol. Let sit on surfaces until dry or for several seconds before wiping dry with a clean paper towel. Lastly, put on gloves and clean with isopropyl.

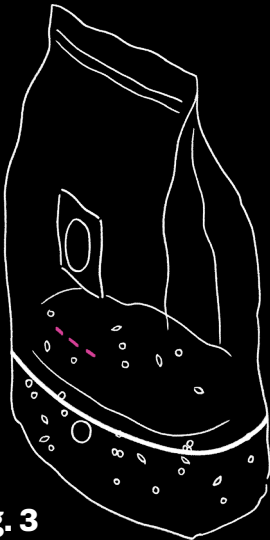
## ENVIRONMENTAL CONDITIONS

**b.** Place your rubber band around the fully colonized block roughly 1" below the surface. Try your best to work any pockets of air up above the rubber band so the bag is tight around the bottom of the block. The rubber band will cut off oxygen to the bottom of the block to help prevent side pins from forming. Next, cut a slit 1-2 inches above the substrate matching the width of the filter patch. (Fig. 3) While not required, if you have a BoomRoom or another enclosed grow space, take advantage and place your bag inside.

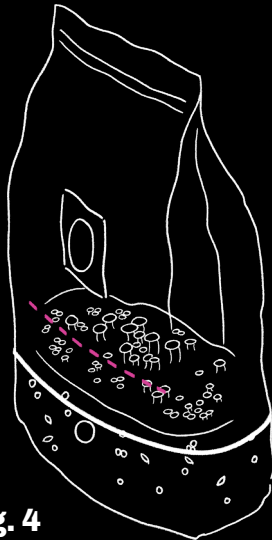
**c.** Let the bag sit until primordia (pins or baby mushrooms) appear on the surface of the block. This process usually takes about a week but can take longer depending on environmental conditions.

**d.** Once pins have formed, extend your cut line across the front to introduce more fresh air exchange. (Fig. 4)

**NOTE:** For fast-growing species such as oysters, it is recommended to cut the full hood as soon as pins have formed, (see step e for instructions on how to cut the hood) You can either fold it back or close it in order to trap more moisture within the growing environment if necessary.



**Fig. 3**



**Fig. 4**

**FRESH AIR, HUMIDITY, LIGHT, AND TEMPERATURE ARE THE FOUR ENVIRONMENTAL CHANGES THAT TRIGGER FRUITING FROM FULLY COLONIZED SUBSTRATES. SHROOMTEK IS DESIGNED TO ACHIEVE OPTIMAL FRESH AIR EXCHANGE AND HUMIDITY. OTHER CONDITIONS TO CONSIDER THAT WILL AFFECT MUSHROOM GROWTH ARE LIGHT AND TEMPERATURE.**

### LIGHT

Unlike plants, mushrooms don't use light as an energy source to grow, but they do need some light to grow properly. 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

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.

### FRESH AIR

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 is essential as the mycelium must sense this lower CO2 concentration (and therefore higher oxygen concentration) to trigger the mushrooms' growth.

### HUMIDITY

The mushroom fruit body you are trying to grow is primarily composed of water. For this reason, the 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.

e. As the mushrooms continue to develop, cut the hood. Do this by extending the cut line around the sides of the bag, leaving the back of the bag completely intact. You can now humidify the inside of the growing environment by spraying up into the hood of the bag, it is okay if droplets roll down into the substrate but do not spray the growing mushrooms or substrate.

f. Harvest when mushrooms are ready!

### g. SECOND AND SUBSEQUENT FLUSHES

Add humidity to the growing environment by spraying the sides and up into the hood of the bag several times over the course of a few hours. This will give the added moisture time to be absorbed rather than pooling at the bottom. Close the bag up by tilting the hood down around the bottom of the bag. (Fig. 5) This will once again trap in the CO<sub>2</sub> and humidity needed for a second flush. Repeat steps c-f until your block is spent and stops producing mushrooms.

NOTE: As your hood will already be fully cut, adjust the position of the hood to allow for greater fresh air exchange as your mushrooms grow in lieu of extending the cut around the sides.



Fig. 5

## HARVESTING

Unlike plants, mushrooms grow incredibly fast and can reach and exceed their peak harvest time over a single day. 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 substrate to prepare for a second fruiting and prevent rotting and possible contamination.



## 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 THE NEXT PAGE 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 CONTINUED

### FUZZY STEMS

**PRIMARY CAUSE:** Excessive CO<sub>2</sub> and/or moisture

**POSSIBLE SOLUTION:**

- Increase fresh air exchange by fully cutting the hood or folding it back.
- Decrease the humidity by spraying up into the hood less often.

### BROWN OR CRACKED CAPS

**PRIMARY CAUSE:** Not enough humidity, harvested too late

**POSSIBLE SOLUTION:**

- Increase the humidity by spraying up into the hood more often.
- Harvest your mushrooms earlier.

### PALE FRUITING BODIES

**PRIMARY CAUSE:** High temperature and/or low light environment

**POSSIBLE SOLUTION:**

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

### ELONGATED STEMS AND UNUSUAL GROWTH

**PRIMARY CAUSE:** High CO<sub>2</sub>

**POSSIBLE SOLUTION:**

- Increase fresh air exchange by fully cutting the hood or folding it back.

### GROWTH STOPPED AFTER PINNING

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

**POSSIBLE SOLUTION:**

- Increase the humidity by spraying up into the hood more often.

### NO GROWTH

**PRIMARY CAUSE:** High CO<sub>2</sub>, high temperatures, substrate wasn't fully colonized, substrate too dry

**POSSIBLE SOLUTION:**

- **PATIENCE:** Sometimes all your block needs is more time. Not all species of mushrooms will begin to grow within a week of being initiated.
- **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 should drain the water out of the bag. 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 block 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 ShroomTek is located is too high some species of mushrooms may not fruit. Try relocating your ShroomTek to a cooler area.

## ALTERNATIVE FRUITING CHAMBERS

**ALTHOUGH THE SHROOMTEK IS DESIGNED AS A SELF-CONTAINED GROWING CHAMBER, IT CAN BE USED IN CONJUNCTION WITH OTHER GROWING CHAMBERS SUCH AS A MONOTUB OR BOOMROOM. USING A FRUITING CHAMBER GIVES YOU FULLER CONTROL OVER ENVIRONMENTAL CONDITIONS.**

### BOOMROOM

Once your fruiting block is fully colonized you can place it in your BoomRoom. You can follow the instructions for the ShroomTek or follow the instructions in the fruiting block booklet for initiating the fruiting of your species of choice. Note that if you follow the instructions for the ShroomTek spraying up into the hood will be unnecessary as your humidifier and controller will maintain the proper humidity within your BoomRoom.

**SCAN FOR FRUITING  
BLOCK BOOKLET** →



### MONOTUB

A monotub can be used to simplify fruiting multiple ShroomTek bags at once. Monotub set-ups range from simple to fully automated.

A simple set-up consists of a bin with filter patches over the holes. You can either follow the instructions in the fruiting block booklet for initiating fruiting of your species of choice or transfer your ShroomTek bags to the monotub when you reach step 4, in either case, humidity will have to be maintained manually throughout the growing process.

Spray the sides and top of the interior of your monotub at least a few times a day to ensure the humidity is high enough for the quickly developing mushrooms. A layer of vermiculite at the bottom of your monotub can be helpful in maintaining proper humidity. If the filter patches are not providing adequate fresh air exchange the lid of your bin can be left ajar to allow more.

If your monotub is fully automated you can follow the recommendations for the BoomRoom above. Find more information on growing using a monotub on our website.



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# SPREAD THE SPORE!

For growing edible fungi \*North Spore's products shall be used only for lawful purposes\*

North Spore cannot and does not promise that its products will yield any particular results for you. North Spore will not be liable to you or to any other person for any damages of any kind in connection with the use of our products, and we make no warranties of any kind, including warranties of merchantability or fitness for a particular purpose, relating to or arising from the use of our products, except as required by law.

Mushrooms produce spores as they develop. This is a natural means of reproduction for the fungus. They usually appear as a dusty surface on your grow kit beneath the mushroom caps. People with allergies or compromised immune systems may want to consider putting fruiting mushroom kits outdoors or in a well-ventilated area as airborne spores sometimes cause respiratory irritation. Spores may also cause irritation for some non-allergic or immunocompromised mushroom growers, though this is rare. Harvesting mushrooms while still in their younger growth stages will reduce the overall spore load.

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