



MIDWEST GROW KITS

Midwest Grow Kits Revision 9.0 2020/2021

How To Use Spawn Bags (Pages 1-5)

How to use the 5-grain spawn Jars (Page 6)

This guide will show you how to properly Inoculate and Grow your Rye or 5-Grain Spawn Bags

- ⇒ Each bag and Jar has a black self-healing injector site, which closes after you pull the needle out.
- ⇒ The white square filter patch located towards the top of the bag allows proper gas exchange but will keep contaminants out
- ⇒ Carefully remove the tape on the top of the bag. Start by peeling it from the side. See photo on right. Do not remove the poly heat tape over the black injection port.
- ⇒ When ready to use, inflate the bag by holding it suspended in the air for a few minutes. Some people use a clothespin or clamp to hang them while they inflate.



Before you add spores or liquid culture

It is important to make sure that all spore injecting activities are done in the cleanest environment possible. Please use one of our sterile spore injection techniques located in our grow guide. Treat injecting the spawn bag just like a substrate jar.

Inoculating

1. Wipe the syringe needle and the injection site (black spot) with an alcohol swab. **Do not remove the clear poly heat tape that covers the port.**



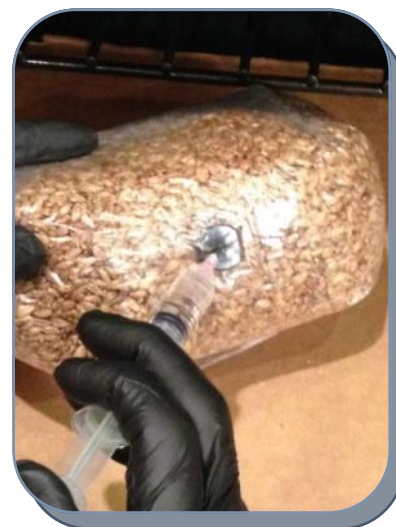
2. Pull the syringe needle cover away from the syringe



3. Flame the needle until it becomes red hot, wait 3 seconds for it to cool. Push the needle about 1/2 inch into the bag and inject about 2-3 cc's of spores. Pull the needle half way out and angle it in a different direction and inject another 1-2 cc's of spores. We recommend a total of 4-5 cc's of spores per spawn bag.



- ⇒ The first injection should be angled up to allow the liquid to touch as many grains as possible. Move the needle in and out to inject in multiple locations to help spread your spore solution around.



- ⇒ Place your spawn bags in a warm, dark location (74-76 degrees optimally) and leave to incubate. Unlike jars, Spawn bags colonize from the inside out so you will most likely won't see any mycelium growth for 7-14 days. Spawn bags generate their own internal heat while colonizing so the internal temperature of the bag is usually 3-4 degrees warmer. *Incubating at temperatures warmer than 80 degrees can cause excess condensation build up and cause wet spots to form slowing down the mycelium growth in that spot.*



- ⇒ Spawn bags are made of entirely organic whole grains, there is nothing besides the grain itself to hold the moisture. Gravity will slowly draw moisture down over time, especially in areas that are not yet colonized by mycelium. When working with slower colonizing strains, It's a good idea to rotate or angle the bag a different direction so a different side is facing down every week or so. This will help keep moisture from pooling and causing "yellow/brown" liquid to appear. Wet spots are considered normal, but when mycelium reaches these spots it takes much longer for it to colonize the area.

- ⇒ If your spawn bag does not show any signs of white mycelium in 10-14 days its possible the spores did not successfully germinate. This can occasionally happen when working with whole grains. If you are sure the spores are of good quality, you can re-inject the bag again and attempt again. Try a different angle with the syringe.

- ⇒ When working with higher quantities of bags we recommend using a liquid culture or agar to skip the germination step and increase your chance of success.

- ⇒ *Unlike substrate jars, spores can react very different with whole grain. We see a wide variance in germination rates and colonization times but this will not affect the end result. Some strains can take 60 days+ to fully colonize while others can take as little as 30!*

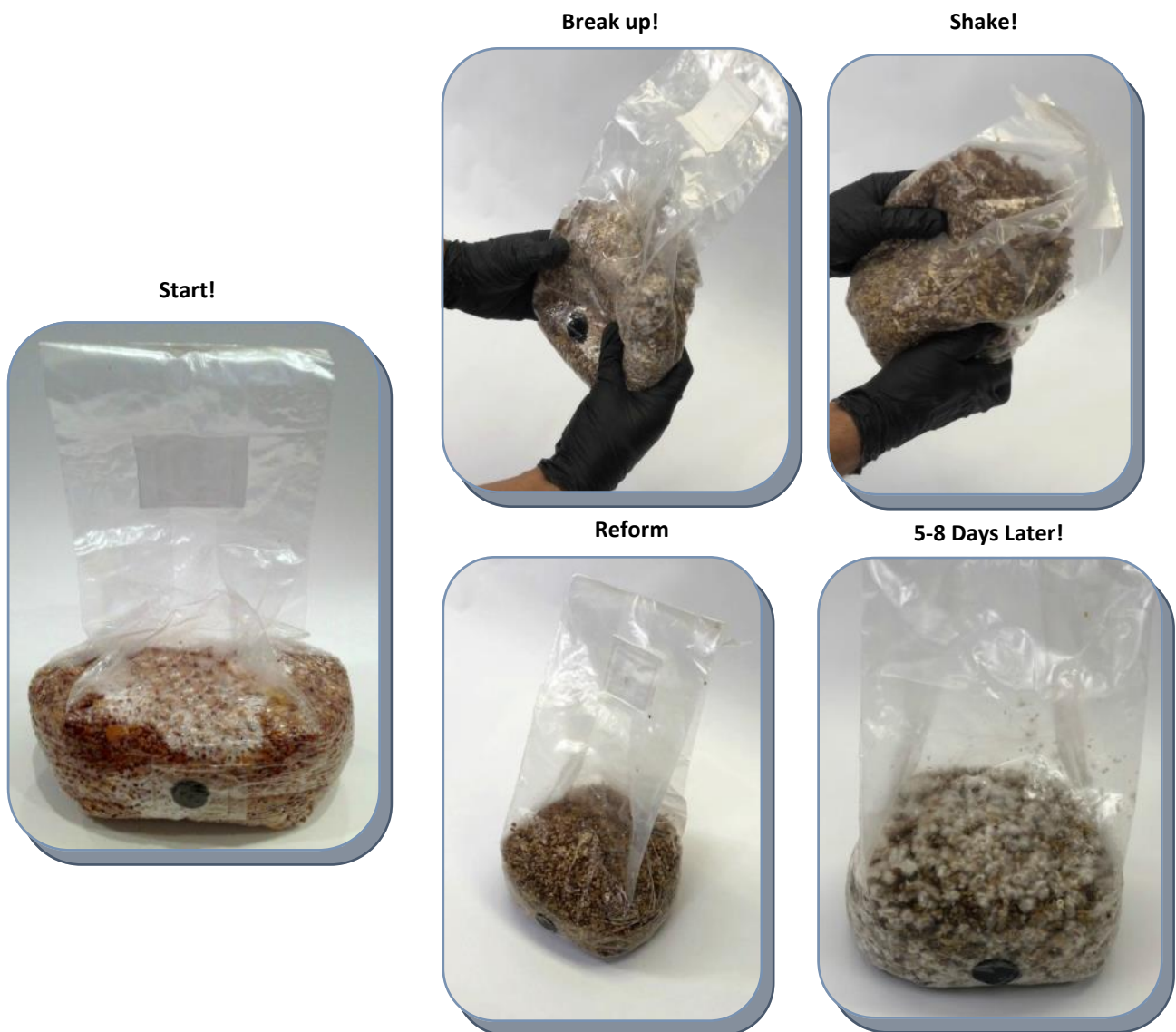


Fully colonized 5-Grain spawn bag rotated on its side.

The Great Grain Mix up! (Optional, but recommended!)

When your spawn bags are about 20-30% colonized or around 12-18 days, you can use this technique to speed the overall growth of the bag. We list this step as optional because it works great 90% of the time but if you are not careful to reform the bag and remove air pockets and loose grain it will not be able to re-colonize properly.

- ⇒ Start by using your fingers to break up all the white mycelium you can see into tiny pieces. Be careful not to puncture the bag with your nails
- ⇒ Mix the mycelium up in the bag by shaking it and kneading it with your fingers. After spreading the white mycelium around, carefully repack the grain to its original shape. Grab the top of the bag and let it fall 12" or so on a counter. Do this a few times. This will pack the grain back down. Next, any loose grain you can press and form with your hands to ensure there are no large air gaps or spaces.
- ⇒ Place your spawn bag back into the incubation chamber and do not move it or disturb it for the next few weeks. You may not see any progress right away but within 5-8 days you should see new growth all over the bag. This will continue until the bag is 100% colonized!
- ⇒ Complete colonization may take 30-45 days depending on the species and what temperature you incubate at. Unlike jars, the speed that spawn bags germinate and colonize may have a much greater variance.



Spawn Bag Tips & Frequently asked Questions

- ⇒ Typically most people have always colonized spawn bags in the dark like the jars. Recent testing and research has shown that light doesn't have any effect on colonizing. Since premature pinning before 100% colonization doesn't happen often with spawn bags, do whatever is convenient for your setup.
- ⇒ When incubating spawn bags with a heating mat, make sure you raise the bags at least an inch above the mat. Use some thick books or anything to make platform for them to sit on. Heating mats can have hot spots which can dry out the grain on the bottom. Indirect heat is best when possible.
- ⇒ **Did you know that you can store a fully colonized spawn bag or Quick Colonizing 5-Grain Jar for up to 3 months? Once colonized simply place your spawn bag or jar in a cool dark spot. Ideal storage temperatures are 55-68 degrees. When you're ready to use it, bring it back up to fruiting temps and proceed like usual!**
- ⇒ If you plan on doing a bulk casing grow and you have a bag that is over 75% colonized but appears to have stopped colonizing, use a marker to trace where the mycelium is, If it hasn't moved past your line in a week and you are ready to move on to next step of breaking up the cake, you can remove the cake from the bag and simply brush off any uncolonized grain. Make sure you only use colonized grain in your bulk casing tub or tray.
- ⇒ Rye spawn bags will always look dry compared to the 5grain. Rye has an outer husk that does not hold water. The water is stored inside the grain.

Growth cycle of average spawn bag without the break up step

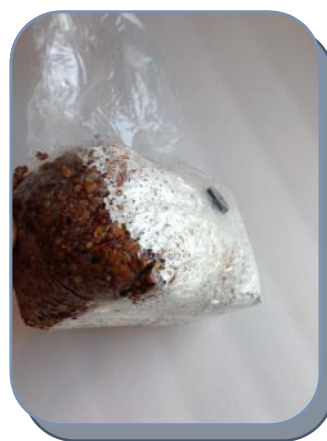
Day 7-10



Day 17-20



Day 25-28



Day 30-32



Fruiting Your Spawn bags

There are 3 different ways to fruit spawn bags. The most popular and recommended way, is the bulk casing method. The yield is four to five times more than the other methods of fruiting. Your second best option for fruiting would be to use a fruiting chamber with perlite like you would the substrate jars. The last option is to fruit directly in the bag.

Bulk Casing Method

This method is typically an advanced way of growing, but using our premade casing mix has made this process easier and more convenient! This method involves simply breaking up the fully colonized spawn bag into small pieces and mixing it with the casing in the appropriate container (see ratios on bulk casing guide). The spawn and casing re-colonize and form a solid large cake. This provides five times the surface area and results in a much larger yield. This has now become the most popular method for first time spawn bag growers. If you choose this method, please refer to the bulk casing guide on our guides page.



Fruiting in a Humidified Chamber

The second most popular way to fruit your spawn bags would be to use a container with dampened perlite (white volcanic rock). This is the method our substrate jar kits use. You will need vermiculite in this method to provide moisture to the cake and keep it hydrated.

- ⇒ Start by removing the colonized grain from the bag. Dunking is not recommended with the spawn bags because they will not absorb water directly into the grain. This is why you need vermiculite.
- ⇒ Place a piece of foil on top of the perlite. The foil should be about one inch larger than the cake on all sides.
- ⇒ Place a 1cm layer of vermiculite on the foil. Use a spray bottle and moisten the vermiculite enough so it's saturated, but you don't want any standing water. Use spring or bottled water for misting.
- ⇒ Place the spawn cake on the vermiculite and add another 1cm layer of vermiculite on top. Spray top layer with water to dampen. You will need to keep the vermiculite damp by misting daily.
- ⇒ It can take a few weeks for mushrooms to form. There are typically no set flushes for this style of growing, the mushrooms will just grow sporadically for the following weeks.

Fruiting in the Bag

The last method is fruiting directly in the bag. This method is easiest, but typically yields the least. You will need vermiculite for this method to keep the grains hydrated.

- ⇒ Cut the top of the bag off. Cut above the white filter patch.
- ⇒ Remove the spawn cake. Add a 1cm layer of vermiculite in the bottom of the bag, then use a spray bottle to moisten the vermiculite enough so it's saturated, but you don't want any standing water. Use spring or bottled water.
- ⇒ Put the spawn cake back in the bag and add another 1cm layer of vermiculite on top of the spawn cake. Spray with water like you did the first layer.
- ⇒ Fold the top of the bag over and use a binder or paper clip to keep it closed.
- ⇒ Open the bag twice a day for a few minutes to allow fresh air exchange. Mist the vermiculite as needed to ensure it stays hydrated.
- ⇒ It can take a few weeks for mushrooms to form. There are typically no set flushes for this style of growing, the mushrooms will just grow sporadically for the following weeks.



How to use the 5grain Jars

5grain jars are very similar to spawn bags with some minor differences we will cover here.

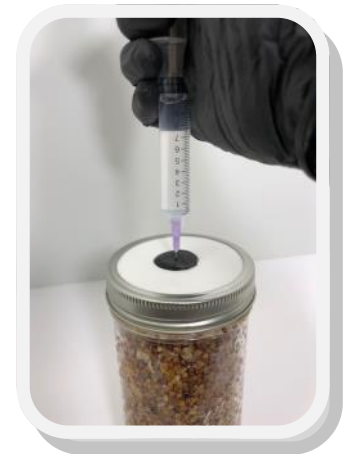
(The lid design have changed slightly due to COVID supply issues, but the process is the same)

- ⇒ When you are ready to inoculate your jar, discard the foil. The foil is only used for the sterilization process and will prevent proper gas exchange if left on during the incubation period.
- ⇒ Each Jar needs 3-4 cc's of spore solution. You can use a little less or more but typically one 10cc spore syringe is perfect for 3 Jars.



- ⇒ Inoculating these 5grain Jars should be done the same way you inject the smaller half pint jars or spawn bags. Choose your favorite sterile technique and begin the process.
- ⇒ After using a flame to heat the needle, inject 1-2cc's straight down through the middle of the black injection port.
- ⇒ Next, pull the syringe up a little and this time angle the needle toward the side glass and inject the remaining 1-2cc's of spore solution.
- ⇒ *You can inject the entire 3 cc's straight down, but when you spread the spores around you increase your inoculation points and can speed up the process.*

- ⇒ Some spore syringe needles are larger than others so for added protection, after removing the needle, place a tiny piece of tape over the black injection port.



- ⇒ The next step is to incubate your jars at the same temperatures as spawn bags. Depending on where the germination begins, you should see white growth within 5-7 days and should quickly spread and fully colonize in anywhere from 14-21 days. After the jar is fully colonized, its best to wait and extra 2-3 days to make sure the center is also finished.

Tip!

- ⇒ If you insert your spore syringe needle and cannot get the needle in, try a different spot. Occasionally the hole may be slightly offset. Do not remove the lid or disk at anytime before its fully colonized.