Monotub 45L Fresh Air Exchange Kit, Tub with 6 Filter Patches, Substrate Optional

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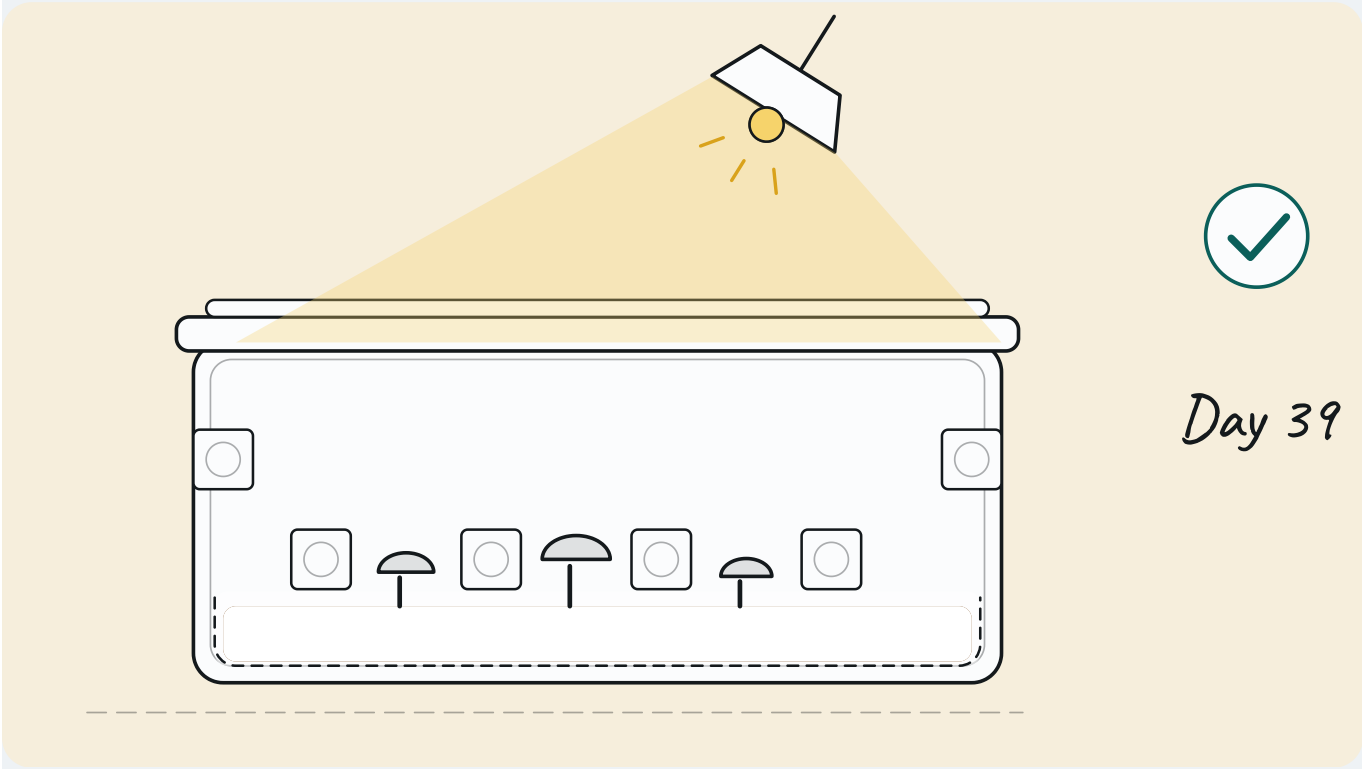
HOW THE ALL-IN-ONE BAG IS COLONISED AND POURED INTO THE TUB



1 Day 1: wipe the port with the alcohol swab

2 Inject 10 to 20 ml of liquid culture into the grain, all in one place

3 Tilt the bag so the culture runs across the base; then dark, at 22 to 23 °C

4 Days 1 to 10: white grows in the grain; leave it alone

5 Day 10: mix the bag through the plastic

6 Day 15: mix again; leave it until all white

7 Day 20: white all through. Use it only when it is fully colonised and all white

8 Wipe the tub down and line it

9 Press a filter patch over each air hole, on the outside

10 Break the bag up through the plastic, pour it in level, below the patches; lid on

11 Five days at 22 to 23 °C, lid on: the surface is white again

12 Light 4 hours a day at least, 12 recommended, indirect; mushrooms over the next 14 days

About Monotub 45L Fresh Air Exchange Kit, Tub with 6 Filter Patches, Substrate Optional

A 45 litre clear tub with a tight-sealing lid and six smoothed air holes, with six 70 × 50 mm stick-on filter patches, one for each hole: the tub of the 45 litre monotub kit, on its own. Buy the tub by itself, with the patches, or with a 4.5 kg substrate pack of monotub substrate mix, rye grain with coco coir, vermiculite and gypsum, that colonises in its bags and fills the tub in one pour.

What is included

Liquid culture is not included. Keep the bag and the tub at 22 to 23 °C; heat mats are on the equipment page.

Tub with filter patches: the 45 litre tub and lid, six melted and smoothed air holes, six stick-on filter patches

Tub, patches and substrate pack: the above plus 4.5 kg of monotub substrate mix as two 2.25 kg bags, hydrated and sterilised, each with an injection port

Two full sets: two of everything

Tub only, the substrate pack only, or six filter patches only, for growers who have the rest

Why the air holes matter

The holes are melted and smoothed rather than drilled, so they do not crack, and the patches let carbon dioxide out and air in while keeping dust and airborne spores out. The tub holds its warmth and humidity with the lid on, so it is never cracked open or misted; a cracked lid dries the surface and misting brings contamination in.

Tub	45 litres, clear, tight-sealing lid
Air holes	6, melted and smoothed
Filter patches	6 × 70 × 50 mm stick-on, 3 micron, one per hole
Substrate pack	4.5 kg rye grain, coco coir, vermiculite and gypsum, sterilised, as two 2.25 kg bags with injection ports
Injection	10 to 20 ml of gourmet liquid culture per bag; liquid culture not supplied
Temperature	22 to 23 °C, in the bag and in the tub
Options	Tub with patches; tub, patches and substrate pack; two full sets; tub only; substrate pack only; six filter patches only

Monotub kit instructions

A monotub is a grain bag's second stage: the colonised rye grain goes into a tub of bulk substrate, the lid goes on, and the tub does the fruiting. These instructions cover the Monotub Mushroom Growing Kit in both sizes. The 25 litre kit carries 1 kg of sterilised rye grain spawn and 2 kg of CVG bulk mix; the 45 litre 1.5 kg of grain and 3 kg of CVG. Both come with six stick-on filter patches for the vent holes, a liner, vermiculite casing, a mist sprayer and gloves. Read the injection rules and the incubation rules first: they are what the sterile guarantee asks for. Psilocybe cubensis spores sold on this site are supplied for microscopy and taxonomy only and are not for use with this kit.

Using the tub with an all-in-one monotub bag

The fresh air exchange tubs take an all-in-one monotub bag rather than grain and bulk, and the tub then needs no misting or fanning. Colonise the bag at 22 to 23 °C, mixing it on day 10 and day 15, and use it only when it is fully colonised and all white: mycelium over every grain is what keeps contamination out of an open tub. Wipe the tub down, line it, press a filter patch over each air hole on the outside, break the bag up through the plastic, pour it in level and put the lid on. At 22 to 23 °C the surface is white again in about five days. Then give it indirect light, 4 hours a day at least and 12 recommended, keep the lid on, and the mushrooms come over the next 14 days; the days are a rough guide in good conditions. The steps below are for the grain and bulk kit.

Step 1: colonise the grain

Inject 10 to 20 ml of liquid culture into the rye grain spawn bag without wiping or heating the needle, then incubate the bag in a dark place at 22 to 23 °C. Mycelium grows at roughly 1 cm every 7 days, so as soon as you see it has taken, mix the bag to spread the mycelium through the grain; this does not damage it and shortens colonisation considerably. The bag is fully colonised when every grain is white with mycelium, which takes about two weeks in a good set-up.

Step 2: set up the tub

- Work in a clean room where the air is still and, if possible, odourless.

- Apply one of the six stick-on filter patches included with the kit over each vent hole, on the outside of the tub, to slow and filter the gas and moisture exchange.
- Cut the liner: flip the tub upside down, drape the black liner over it and cut so about 4 inches hang down the sides, which makes two liners. Turn the tub the right way up and lay a liner inside with what was the inner side of the bag facing up, as this is the clean side.
- Break up the colonised grain spawn and loosen the CVG bags (two in the 25 litre kit, three in the 45 litre) before opening any of them, then cut the tops off and put on the gloves.
- Spread 4 handfuls of the darker CVG over the bottom of the liner, then 1 handful of broken-up grain spawn kept to the centre of the tub, away from the edges to limit side pinning and contamination.
- Continue with 2 handfuls of CVG for each middle layer and 1 handful of spawn until the spawn is used up, keeping 3 to 4 handfuls of CVG back to cover the final layer so no spawn is exposed.
- Compact the substrate with your fingers around the edges only, then sprinkle vermiculite lightly over the whole surface.
- Mist the surface with about 5 squirts on the fine spray setting and fit the lid. From now the light is on, 4 hours a day at least and 12 recommended, and the tub stays at 22 to 23 °C. The surface is white again in about ten days, pins about a week later.

Step 3: after the lid goes on

Nothing is opened: the patches do the air exchange and the tub keeps its own humidity, so there is no misting and no fanning after the set-up sprays. The one exception is the walls: if the condensation on the inside walls disappears, give the walls, never the surface, a light mist. Pins show at about day 36 from the injection and the first harvest comes when the caps begin to open, around day 42; the days are a rough guide in good conditions. After a flush, re-wet the block with a 12 hour soak or a heavy misting of the surface and return it to the same light.

Step 4: if nothing happens

- Nothing after 20 days, with condensation on the walls: probably too wet. Leave the lid on and walk away so the moisture vents naturally, and fruiting should follow within 2 weeks.
- Nothing after 20 days and no condensation: probably too dry. Add 500 ml of clean water to a corner of the substrate, leave it for 12 hours, drain, and put the lid back on.
- To tell wet from dry, weigh the tub before its first flush: it started with 3 kg of substrate in the 25 litre kit or 4.5 kg in the 45 litre, so lighter is dry and heavier is wet.

When pins appear, the pinning guide covers what to look for and when to pick. If something is growing that is not your mushroom, the contamination guide explains what you are looking at and what to do with the tub.

Supporting articles

- Fruiting chamber set-up for home mycology: the conditions a tub is trying to create, and how to read them.
- Understanding fruiting conditions: temperature, humidity and fresh air, and what goes wrong when one is off.
- Pinning guide and contamination guide.
- Incubation rules and injection rules: the two short pages behind the sterile guarantee.

Going again

The tub is reusable. For the next run you need a colonised grain bag and fresh bulk: a sterilised rye grain spawn bag with a pasteurised bulk substrate bag ready to use, or your own bulk prepared with the bulk substrate in the bag method. An empty monotub with polyfill is listed for anyone who wants a second tub.

Injection rules

Almost every contaminated bag we have ever replaced went wrong in the thirty seconds between opening the syringe and finishing the injection. The syringe, the needle and the bag all arrive sterile; the job is to keep them that way for those thirty seconds. These are the rules our sterile guarantee asks you to follow, and they apply to gourmet liquid cultures and spawn bags alike.

Rule 1: never heat, flame or wipe the needle

Every needle arrives gamma-irradiated sterile in its own wrapper, and the syringe casing and end cap keep the contents sterile. Flaming a needle leaves soot and a hot tip that kills what it touches; wiping it with alcohol drags whatever was on the wipe onto the one part that goes inside the bag. Use the needle straight from the wrapper. There is a sticker on every bag saying the same thing.

Rule 2: seat the needle properly

A loose needle is the other big cause of contamination. Push the needle hub onto the Luer lock and give it a quarter turn until it stops. It should not wobble. If it does, take it off and seat it again before you go anywhere near the bag.

Rule 3: work still, not clean

You do not need to sterilise the room. You need still air. Close the windows and doors, turn off fans and heating, and wait a minute for the air to settle. Wash and dry your hands, then keep them away from the needle. A still air box helps but is not required for a bag with a self-healing port.

Rule 4: go through the port, once

Every bag has a self-healing injection port. Push the needle through the centre of the port at a slight angle, inject, and withdraw in one movement. Do not inject through the plastic beside the port, do not make a second hole, and do not open the bag to "check" the grain.

Rule 5: how much, and where

Use the amount the product page for your bag gives, and inject all of it in one place. Do not move the needle tip about inside the bag and do not wind the needle round in the port: that can damage the port. The liquid is spread afterwards, not with the needle. An Inject-and-Forget bag is mixed straight after injection. A grain-based bag is tilted so the solution runs across the whole base of the bag.

Rule 6: wipe the port, and nothing else

Every bag comes with a small alcohol swab. Just before you inject, wipe the injection port with it, once, and give it a few seconds to dry. That is the only thing on the outside of the bag that gets wiped: not the needle, not the rest of the bag, and nothing afterwards. The port reseals itself; do not tape over it and do not wash the bag.

Rule 7: one syringe, one job

A syringe is a single-use item. Draw from a fresh syringe for each strain or culture, cap it if you have to pause, and do not put a used needle back into a sterile bottle.Spare needles can be added at the basket.

What happens next

The bag goes somewhere warm and dark and stays sealed until it is fully colonised. That part is covered by the incubation rules. Follow both sets of rules, buy the syringe and the bag together from us, and if the bag still contaminates before it is opened for the first time, the sterile guarantee replaces it.

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Incubation rules

Once the bag is injected, the work is done and the waiting starts. Our spawn bags and all-in-one grow bags are made to stay sealed from injection to first harvest, so the incubation rules are mostly about resisting the urge to help. These are the rules our sterile guarantee asks you to follow after the injection rules.

Rule 1: keep it sealed

Do not open the bag, cut the bag, or add anything through the port after the injection. The filter patch lets the bag breathe; nothing else needs to. A bag opened "to have a look" is no longer a sealed bag, and it is no longer covered by the guarantee.

Rule 2: warm, dark, still

Put the bag out of direct light, where it will not be moved or knocked, at the temperature for its type: 22 to 23 °C for a grain-based bag (the 50/50 all-in-one bag, the LightBag, the SprinkleBags and every rye grain spawn bag), and 26 to 27 °C for the brown rice flour Inject-and-Forget bags. Grain-based systems are kept cooler so the grain layer at the base does not dry out. An airing cupboard, the top of a wardrobe or a heated incubator all work; the LightBag is made to colonise in dim light, the others prefer dark. Do not put a bag on a radiator, on a heat mat with no thermostat, or in a window: mycelium that goes past 28 °C stalls, and hot bags sweat, which is what contaminants like.

Rule 3: mix on the schedule, not before

An Inject-and-Forget bag is mixed well, through the plastic, on the day it is injected. That same-day mix is the reason Inject-and-Forget bags work so fast. A grain-based bag is the opposite: leave the grain where it landed, and only break it up and shake it after day 10, once the spores have germinated. After any mix, leave at least five days before the next one so the mycelium comes back healthy. Shaking a grain bag before day 10, or mixing more often than every five days, breaks the early growth and spreads whatever else is in there. When you do mix, mix well: knead the bag through the plastic, not a little shake.

Rule 4: wait for full colonisation

White mycelium spreads from the germination points and joins up. In a grain-based bag you see it first on the bottom of the bag, where the solution ran. An Inject-and-Forget bag that was mixed straight after injection shows hundreds of germination points all through the substrate. A bag is ready when the grain is white all the way through with no yellow, brown or grey patches. That takes two to four weeks for most gourmet species at the right temperature, longer if the room is cool. Slow is not the same as failed.

Rule 5: know what contamination looks like

Green, blue-green, black or pink patches, a wet grey slime, or a sour smell through the filter patch are contamination. White fluffy growth, small drops of yellow-brown liquid on the mycelium and a mushroom smell are not. If you are unsure, photograph the bag against a plain background in daylight and send it to us before you do anything else; the contamination guide has pictures.

Rule 6: when the bag is fully white, move on

A grain bag is fully colonised when every grain is covered in mycelium. For a spawn bag, that is the moment to mix it into bulk substrate for a monotub or bag-tek, with the substrate calculator giving the quantities; a grain bag is not fruited without a bulk substrate or a casing layer. A fruit-from-the-bag system is usually ready

to fruit by day 20 on our mixing schedule: mix first on day 10, again on day 15 and again on day 20, then place it into fruiting conditions, still sealed until the product page says to open it. Opening the bag for the first time is where the guarantee ends and the growing begins.

If something goes wrong

Contamination before the first opening, on a bag and syringe bought together from us and handled by these rules, is covered by the sterile guarantee. Send the claim form with photographs of the whole bag, the injection port and the filter patch, and your order reference, and we will replace it.

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