

**MAYA**

M U S H R O O M S

**STERILISED GRAIN BAGS  
INSTRUCTIONAL GUIDE**

*“Be kind whenever possible.  
It is always possible.”*

*- Dalai Lama*



## STERILISED GRAIN BAG INSTRUCTIONS

**Our sterilised grain bags are packed fully hydrated and dry to the touch; however, due to fluctuations in temperature during shipment, condensation may form in your bag** - Should this happen, do not panic; simply massage the bag to mix up the grain and evenly distribute the water, leave overnight and the grains will re-absorb most of the excess water.

**Please take your time to go through the following information thoroughly to ensure a successful grow and to avoid common issues.**

As an added precaution, we add a small amount of sterile vermiculite to the bottom of each bag to soak up any excess condensation which may form during transit. This also reduces burst grains in the lower half and helps control excessive condensation formation caused by temperature swings in your room during colonisation.

Our sterilised grain bags are batch sterilised on an extended 2.5-hour cycle in an industrial computer-controlled autoclave. Each bag includes a sterility check strip that will confirm visual sterility (which turns purple to green after successful sterilisation). All bags are left for two weeks to ensure no contamination is present and then individually inspected before dispatch - this ensures they leave our facility 100% sterile. We produce and sell thousands of sterilised grain and substrate bags each month and ensure each one leaves our facility in perfect condition.

**ESSENTIAL STEP: Please ensure your grain bag is sterile before inoculation by leaving it 1-2 weeks after receipt to ensure no contamination grows. This will confirm the sterility of the grain. Should you experience contamination later in your grow you will be better able to investigate the issues which caused it -**

**99.9% of the time it will be a contaminated spore syringe, culture, or improper sterile technique whilst inoculating.**

**We are unable to offer replacement bags or refunds if contamination occurs after you inoculate the bag, so please ensure you are satisfied that your grain bag is fully sterile before inoculating.**

Although we do our best to package our grain bags correctly, on rare occasions, they can become damaged during transit due to heavy handling. If you notice any visible damage or experience contamination before inoculation, please **keep hold of the bag(s)** and notify us immediately (including photos of the damage/contamination). We will send you a replacement bag ASAP.

If you decide to inoculate the bag with a spore syringe and later discover contamination within the bag, it will be because either your spore syringe contained contamination or sterile procedures have not been followed, so contamination has been introduced during the inoculation process.

Grain bags should be inoculated with clean liquid mushroom cultures, not spore syringes. Whilst it is certainly possible to have a successful grow using a spore syringe, the chances of introducing contamination into the bag are *much* higher; from experience, we would estimate the chances of contamination occurring using a spore syringe from any supplier would be around 30-50%.

## ADVICE FOR A SUCCESSFUL GROW

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### **Step 1 - DRAW FILTERED AIR INTO BAG**

To allow the mycelium to breathe and colonise correctly, it is essential to ensure free air space on the back side of the filter (i.e., not pressed up against the wall of the bag).

To draw filtered air into the bag, you can simply hold or hang the bag from the top for a few minutes (like you are hanging something on a washing line); this will create negative pressure, gently drawing air into the bag through the filter.

Making space behind the filter will allow correct air exchange when the bag is inoculated, resulting in healthy mycelial growth.

**Do not try to remove or touch the white filter patch.** The filter patch has millions of micron-sized holes, allowing air exchange whilst filtering out contamination.

Only attempt to open the bag once 100% colonisation has occurred. Uncolonised parts will likely become contaminated if the bag is opened before total colonisation.

## **Step 2 - INOCULATION AND TIMESCALES**

As mentioned, we **advise against** injecting spores directly into grain for various reasons. Firstly, despite what many sellers claim, no spore syringe can ever be guaranteed to be 100% contamination-free due to the very nature of how they are produced (spore prints are taken from fresh mushrooms which are grown in unsterile open-air conditions where mould spores can circulate freely).

Sterilised grain is *highly* nutritious and prone to contamination when inoculated with a spore syringe. It only takes a single microscopic mould spore to contaminate a syringe and thus contaminate the grain bag. Spore syringes can have unpredictable timelines for initial growth, ranging from approximately one week to over a month.

However, it is still possible to successfully inoculate grain with spore syringes, and many people do (though chances of failure can be much higher than if using a clean liquid culture). If you do wish to continue to use a spore syringe for direct grain inoculation, please be aware of the risks and ensure you inoculate the bag with the correct procedures to reduce the chances of introducing contamination into the bag:

- Flame sterilise the needle until red hot using a lighter, and then cool the needle by squirting a small amount of spore solution or liquid culture through the needle. Next, wipe down the inoculation port with 70% alcohol. Finally, inject **1-2ml of solution into the bag** directly through the grey injection port and plastic covering - into the sterilised grain. Ensure your needle is not too big. Otherwise, you could core the injection port, leaving a permanent hole. For extra precaution, we recommend taping over the injection port after inoculation; regular sticky tape is OK.
- You should expect to see the first signs of mycelial colonisation within two weeks, but sometimes it can be three weeks or even longer; this unpredictability is one of the problems with using spore syringes.

### **(OPTIONAL) Step 3 - WAIT FOR 30-50% COLONISATION OF GRAIN & MIX BAG**

After inoculating the grain with your chosen inoculant, wait for the grain to colonise approximately 30-50%. Next, break up the colonised section of the grain into individual grains and mix the entire contents thoroughly - until the bag looks uniform and consistent. This should be done using your hands from outside the bag. Please do not open the bag at any point; it must remain sealed.

### **Step 4 - WAIT FOR FULL COLONISATION OF THE BAG**

Once the bag is fully colonised with mycelium, mix it with your chosen substrate and move to the next step.

Different mushrooms require different substrates to fruit successfully. What substrate you choose will depend on your available equipment, grow environment and experience level.

We would advise researching various methods of fruiting mushrooms before mixing your colonised grain bag onto your prepared substrate.

Many people will opt to fruit in a Monotub, Shotgun Fruiting Chamber, a Martha fruiting chamber/humidity tent or something similar. A quick Google search will yield many results for you to research if you are new to mushroom cultivation.

# HOW WE MAKE OUR STERILISED GRAIN BAGS

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We have been making sterilised grain and grow kits for years and produce thousands of bags each week for both hobby growers and commercial operations.

To make our kits, we first triple-rinse the grain to remove dust or chaff. Next, we soak them overnight in purified water + gypsum + weak coffee solution to partially hydrate the grains and allow any endospores to activate; adding gypsum + coffee provides additional nutrients to the grain, supporting healthy mycelial growth.

The partially hydrated grains are then slowly brought to a boil until the grains are hydrated to precisely 55%. We quickly drain the boiling water and immediately distribute the grain on our outdoor drying racks, leaving them to steam off and cool. This process removes any excess external moisture, resulting in perfectly hydrated grain, which is dry to the touch.

The resulting grain is weighed into genuine Unicorn bags. The bags are double sealed and put through our autoclave on an extended 125°C cycle for 2.5 hours to ensure all contaminants are killed off.

Once allowed to cool slowly, the bags are individually checked and left to stand for two weeks to ensure no contamination is present; only then are they checked for a final time and dispatched to our customers.

# FAQ's

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## **I CAN SEE A SLIGHT POWDERY SUBSTANCE ON MY GRAIN / MY GRAIN LOOKS DRY.**

The slight powdery residue on the grains and the occasional white spot is gypsum. We add horticultural gypsum to the soak water of the grain to add beneficial nutrients to the grain which helps to promote healthy mycelial growth. Another benefit of gypsum is that it helps prevent grains from sticking together inside the bag, allowing for better airflow and less chance of bacterial contamination during growth.

## **I HAVE BURST GRAINS IN MY BAG.**

The most significant cause of burst grains is condensation forming on the inside of the bag during transit, which drips down the inside of the bag and oversaturates the grain on the outside edges and bottom. This can cause the grain to overhydrate and rupture. Condensation can form during transit, especially during the winter months.

When this happens, we are sometimes accused of over-boiling our grain - This is not the case. We bring our grain to the boil slowly over 3 hours to ensure the grain hydrates slowly; this slow-boil process almost eliminates burst grains during the boiling process.

Maintaining consistent temperatures where the bag is stored or being left to colonise is essential, as temperature swings can cause large amounts of condensation to form. A *consistent* temperature of between 20-24°C is the perfect temperature for grain colonisation for most mushroom species. Unfortunately, condensation can form much quicker than it can take to disappear, so maintaining constant temperatures during colonisation is essential.

## **HOW LONG CAN I KEEP MY STERILISED GRAIN BAG BEFORE USE?**

We recommend using your sterilised grain bags as soon as possible, but bags can be stored safely for up to a few weeks before use. Simply leave them in the box they came in before use and keep them at room temperature. Please do not put bags in the fridge, as this can cause excessive condensation, which you don't want.



## **MY BAG WAS WET INSIDE AFTER I RECEIVED IT.**

As mentioned above, pooling water results from condensation forming in the bag during shipping; this is more likely to happen during winter when outside temperatures are low. To overcome this issue, simply draw air into the bag (see above), mix the grain up and leave for a few hours; this will redistribute the water in the bag and allow the grain to soak up the water.

Note that we bag our grain when it is hydrated yet perfectly dry to the touch, the way it should be. Our bagging machines would not operate properly if we tried to bag wet grains - not that we would ever want to!

## **THE GRAINS LOOK DARK BROWN IN COLOUR, WHY IS THAT?**

We soak our grains in a diluted organic coffee solution (depending on the availability of spent coffee grounds) to add additional nutrients and trace minerals to the grain, which aids in mycelial development. This can change the colour of the grains during the boiling process.

## **WHAT IS THE SUBSTANCE AT THE BOTTOM OF THE BAG?**

This is vermiculite; it is a type of heat-expanded rock which is highly absorbent. We add this to soak up excessive condensation, which might form and pool at the bottom of the bags during shipment. It will act as a water store for your mushroom mycelium to use during your grow. It can be safely mixed up with the grain and is used widely in mycology and mushroom cultivation for many purposes, including mushroom substrate production.

## **WHAT TO DO IF I HAVE A PROBLEM?**

Feel free to contact us if you have any problems or questions. We always recommend sending through multiple photos as this can significantly help us determine the issue you are facing.

# **We're here to help...**

## **Sales & Support Emails**

[sales@mayamushrooms.co.uk](mailto:sales@mayamushrooms.co.uk)  
[support@mayamushrooms.co.uk](mailto:support@mayamushrooms.co.uk)

## **WhatsApp / SMS**

07443 582828

## **General Enquiries**

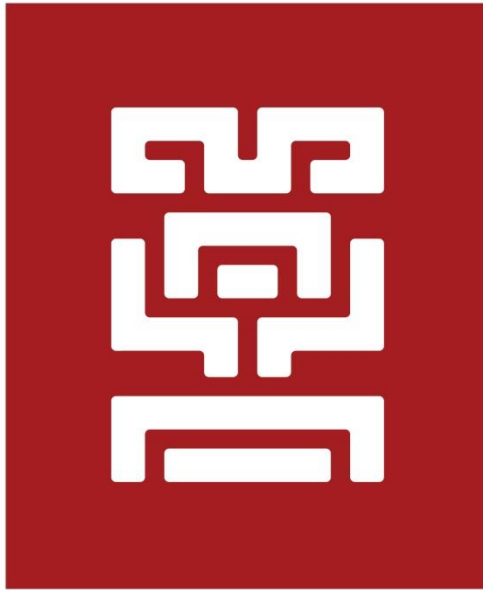
[hello@mayamushrooms.co.uk](mailto:hello@mayamushrooms.co.uk)  
Tel: 01452 224809

*At present, we do not have a shop and offer a mail order service only.*

## **Our Return Address**

Maya Mushrooms Ltd  
Unit 6C  
Stowfield Cable Works  
Lydbrook  
Gloucestershire  
GL17 9NG

*"Spread love everywhere you go. Let no one  
ever come to you without leaving happier."  
- Mother Teresa*



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**PACKED & CHECKED BY:**

**STERILISATION DATE:**

**NUMBER & TYPE OF BAG(S):**

**- STERILISED GRAIN INSTRUCTIONAL GUIDE -**

**THANK YOU FOR YOUR ORDER**