

LOW – TECH SMALL – SCALE OYSTER MUSHROOM PRODUCTION FOR DUMMIES.

- This model has potential in most of Africa's 54 States.

Developed by **Darlington Mafa**

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FIRST STEPS

Look for an experienced trainer to take you through the process.

Potentially visit an existing mushroom producing site to familiarize you with how it works. We can help with that; just reach out.

Email ***rimaafrika4@gmail.com*** and learn more about starting up.

- Kindly buy Oyster Spawn for reputable dealers to secure product quality; the mushroom landscape is relatively unfamiliar to most farmers.

YOU WILL NEED

Substrate

This is basically hosting material that you pack in the production pack bags for the spawn to feed on – not really or to grow from. This varies from country to country, and I personally encourage using stuff that is immediately available.

In Zimbabwe they use sawdust, wheat straws and cotton [obviously you remove the seed). If you are reading this from a different country use what others are using. No hard feelings!

Mushrooms require hygiene and the substrate – whichever you would have chosen, must be seriously decontaminated. I recommend boiling it with a common detergent like bleach for over six hours allowing it to cool down to the least amount of heat and moisture before packing it.

You can also use the hydrogen peroxide disinfection method; if its easily accessible to you. I don't know everything; google some of these things or ask; remember you have been to an existing growing site for evidence-based learning.

How to package it

Use polypropylene plastic bags [they are common don't mind the name] preferably 5 kgs in size. Keep them clean and avoid tearing the bags unnecessarily. Preferably keep them refrigerated.

SITING

Mushrooms grow in the open forest, on the ground and under trees [in the wild of cause] but these are not wild or non – timber fruit products. These are potential income mushrooms and so you must dedicate a controlled room to them. Just to simplify, this could be your common thatched hut, your wooden cottage [common to Zimbabwe] or any room literally.

Site choices

Ideally, this is a cool, clean, and dark area away from direct sunlight, but which still has fresh air. So, it could any room that has been thoroughly cleaned and has a roof on it, that is well ventilated and has been disinfected [this is the part where you must talk to existing mushroom farmers, this information gap provides an opportunity for the interested farmer to work around and see the enterprise from their own perspective]

Try your abandoned thatch house, shade, room within the house or back room and seal off the windows, if any, from direct sunlight. You could simply spray around the room with bleach especially along wall corners where molds might grow from.

PACKAGING AND GROWTH DESIGN

- **Do the following with clean hands – preferably washed by antibacterial soap and all apparatus must be disinfected by soap cleaning.**

Did I mention that the spawn was the seed and that the substrate, and the spawn must be mixed in the poly what not hopefully 5 kg bag plastic bag.

The idea is to rinse the substrate after boiling to the least degree of moisture possible and start filling the bags at a rate of five parts spawn within the bag. Simplified, you pour in spawn [in Zimbabwe lets use the Pfuko Maheu Lid and put five of those in the 5 kg bag. In other countries [no hard feelings again] add between 300 – 500 grams of spawn.

Unfortunately for other African countries this could be something you don't get, no hustle, ask around you know! Contributions are welcome. It always takes more than one man to tackle the anthill with a hug.

You fill that up and pour it into the bag first then add a layer of substrate [cotton husks, wheat straws or sawdust] add a second amount of spawn at the same measurement and add

another layer of substrate then another layer until you have five spawn parts and whatever amount of substrate. Seal off the bag with a layer of spawn. I will be providing diagrams later.

Airtight seal the bag and place on the production room floor in an upright position. Preferably spread clean black plastic across the production room floor. ***Do this for all packed bags.***

INCUBATION

The preceding process is called inoculation and once this is done you have to wait for incubation to happen. This could take from 1 to 3 weeks, and you will be waiting for colonization – the agricultural kind.

Successful colonization is when the inside of the bags turns a whitish – grey color from the previous brownish color of said wheat straws and sawdust. If the whitish – grey color takes over the bags, puncture reasonably random holes all over the bag to encourage the mushroom fruit to sprout out.

At this point no light is needed but try to maintain a healthy air circulation and temperatures should range between 10 to 27 degrees Celsius and a humidity of around 95 to 100 %. This will encourage pinning or fruiting.

You will notice a change within the bags as fruiting or simply put when the mushroom fruits begin to grow. At this point watch out for rats, mice – which you could trap and eat and set up effective mouse traps. Also, at this stage the bags might start to dry up and you must gently nozzle spray them with water and placing open dishes of water on the floor in the rooms.

Avoid directly watering into the bags. Just do as told right.

Some people grow the mushrooms on the floor, I don't prefer this, and I would advise that you hang them from a pole crossing the floor or a shelf. That's just me!!!

MANTAINANCE

Once the plants are growing, maintain the humidity levels to ensure regeneration. You could make use of a hygrometer also continue keep a close eye on flies and water spray when

needed. If any mold is found, either remove the infected straw or the entire mound from the growing area.

PLANT HEALTH

Be on the lookout for overwatered mushroom sprouts that turn black, yellow, and green. Black ones should be thrown away and removed from the room totally and for the yellow and green try to spray with hydrated lime at package recommended rates. Separate them from the rest though as you attempt to save food lives.

HARVESTING

If you get to this stage and have something to harvest, I don't think you will be needing any advice.

Darlington Mafa is the Founder of Rima Africa Zimbabwe and this App.

He is also an Impacthub Accelerate2030 Fellow 2021

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He holds a B.Sc. in Agricultural Economics and Development.