



Mushroom cultivation



Rammed Earth
Mushroom House



Steps in mushroom production

(the bag system)

1. Preparation of Potato Dextrose Agar (**P.D.A**)
 - Inoculation with tissue culture
2. Spawn preparation
 - Inoculation with PDA culture
3. Substrate or compost preparation for fruiting bag
 - Inoculation with spawn culture
4. Monitoring moisture, harvesting
5. Vermicomposting spent substrates



Preparation of P.D.A medium

Material

- Potato 200g
- Dextrose/glucose 20g
- Agar 15g
- Water 1 litter



Preparation of P.D.A medium



1. Wash and cut some potato tubers into cubes of about 1cm in size. Weigh out 200g of the potato.
2. Transfer the potato into a pot and pour 1L of water into pot
3. Boil the potato cubes on low heat for about 20mins.

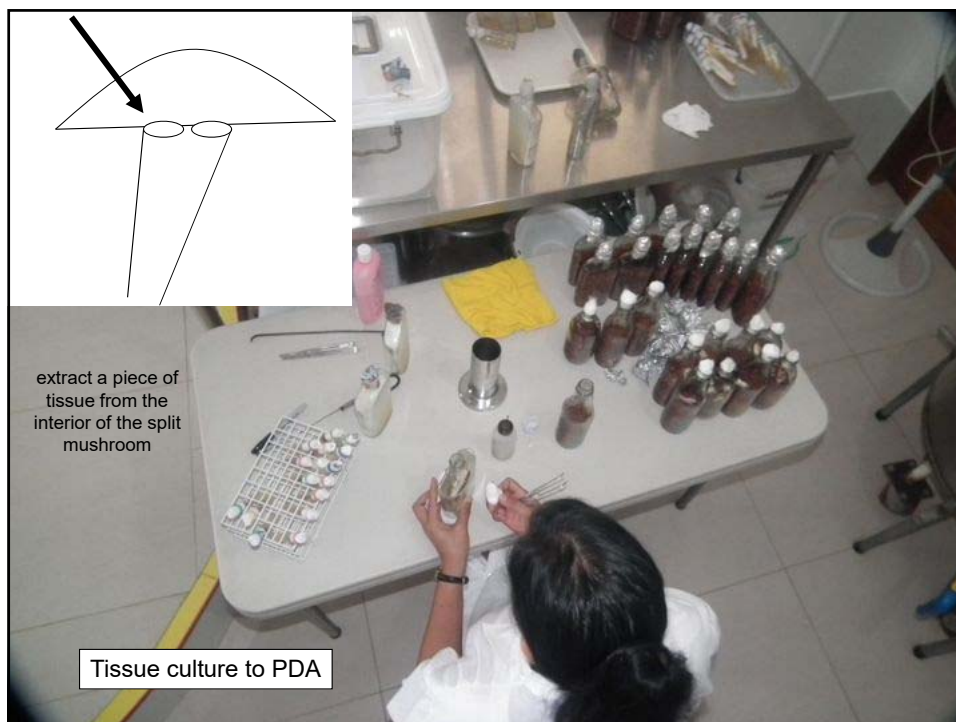
Preparation of P.D.A medium



4. Strain out the softened potato cubes and return broth to continue boiling.
5. Add 15g of agar powder and 20g of dextrose to the broth and stir to dissolve them.
6. Pour broth suspension into clean flat bottles. Fill each bottle 3/4 full. Cap each bottle with a cotton plug and sterilize in a pressure cooker for 20-30 mins at 15 pounds per square inch.
7. Allow the sterilized agar medium to cool and place the bottles on an incline.

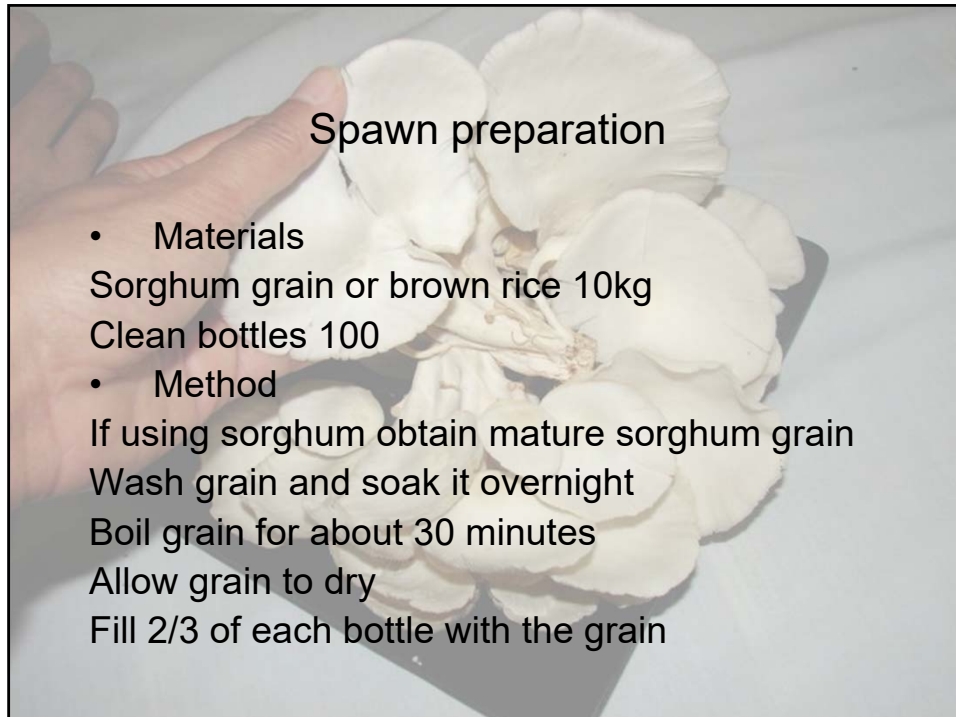
Obtain a pure culture of the oyster mushroom (*Pleurotus* sp)

1. Select a mature mushroom. (Basidiocarp)
2. Aseptically split the mushroom length-wise then flame and cool your inoculation needle or scalpel.
3. Use the tip of the needle to extract a piece of tissue from the interior of the split mushroom – and then place it on the surface of the P.D.A medium.
4. Incubate the agar plates at room temperature for 7-10 day until the mushroom mycelium develops.





Spawn preparation

- Materials
Sorghum grain or brown rice 10kg
Clean bottles 100
- Method
If using sorghum obtain mature sorghum grain
Wash grain and soak it overnight
Boil grain for about 30 minutes
Allow grain to dry
Fill 2/3 of each bottle with the grain



Spawn preparation

Place the cotton plug on each bottle and
sterilize in a pressure cooker for 20-30
min. at 15 pounds per square inch
Cool the sterilized bottles



How to inoculate sterilized sorghum grain or brown rice with the pure culture of mushroom mycelium.

- Flame and allow your inoculation needle to cool.
- Remove cotton plug from P.D.A culture medium and cut out a 1×1 cm block of mycelium. Flame the mouth of the bottle and return the cotton plug.
- Remove cotton plug from sorghum grain bottle and flame the neck of the bottle. Insert the block of mycelium tissue above and place it in the center of the surface of the grain, with mycelium surface in contact with the grain.
- Return the cotton plug.
- Incubate the bottles at room temperature until the mycelium has completely colonize the grain.

Substrate preparation (fruiting bag)

Spray with FAA
Turn day 3 & 6

Aloha Style

Original Thai Food Style

- 100kg Sawdust
- 5kg Rice bran
- 1kg Lime(CaCO_3)
- 1kg Gypsum (CaSO_4)
- 200g Rock phosphate
- 200g Magnesium sulphate(MgSO_4)
- 200g Aloha Rock Dust

- EM, molasses, polyethylene autoclave bags, plastic, cap

280 bags

Pale MUSHROOM GROW BAG MEDIUM

32	sawdust	195	kl
	D1 rice bran	50	kl
	Limestone-fine	1.25	kl
	gypsum	1.25	kl
	volcanic dust	0.625	kl
	granite dust	0.625	kl
	EM1	150	ml
	Molasses	150	ml
	water	3000	ml

248.8 total dry



Method



Weigh and thoroughly mix all the ingredients listed above on a concrete floor.



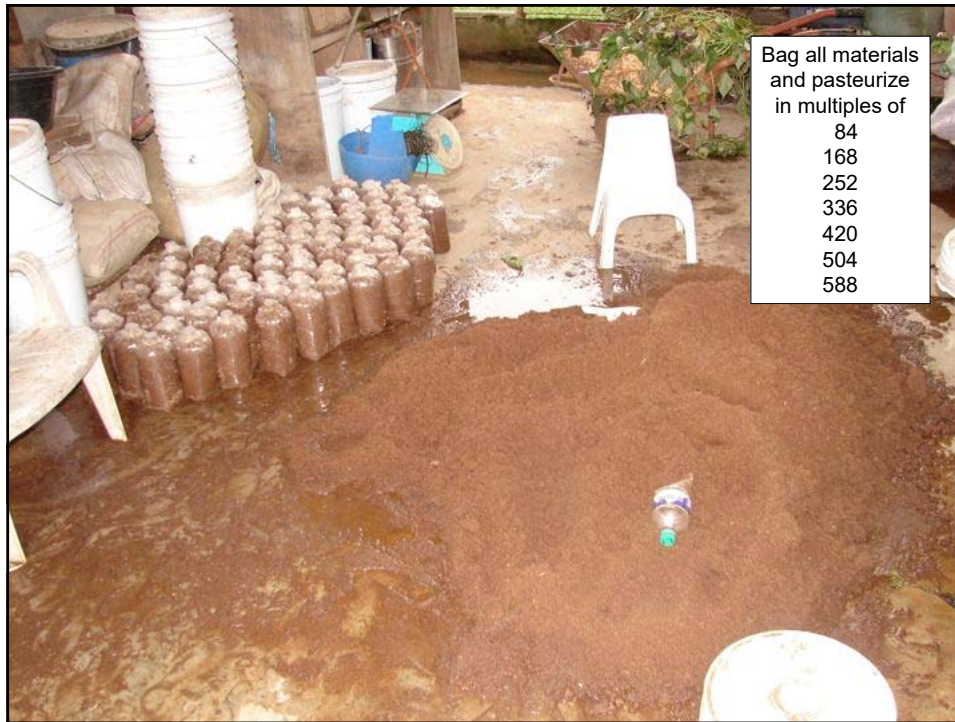
Water(10L), 10ccEM + 10cc molasses and water and mix the substrate until a 50-60% humidity is achieved.



Ferment 5 days and incorporate 800- 1000 g per plastic bag.

Compact the substrate in the plastic bag. Place a collar over the neck of the bag and pull the plastic outwards before capping it with a cotton plug.

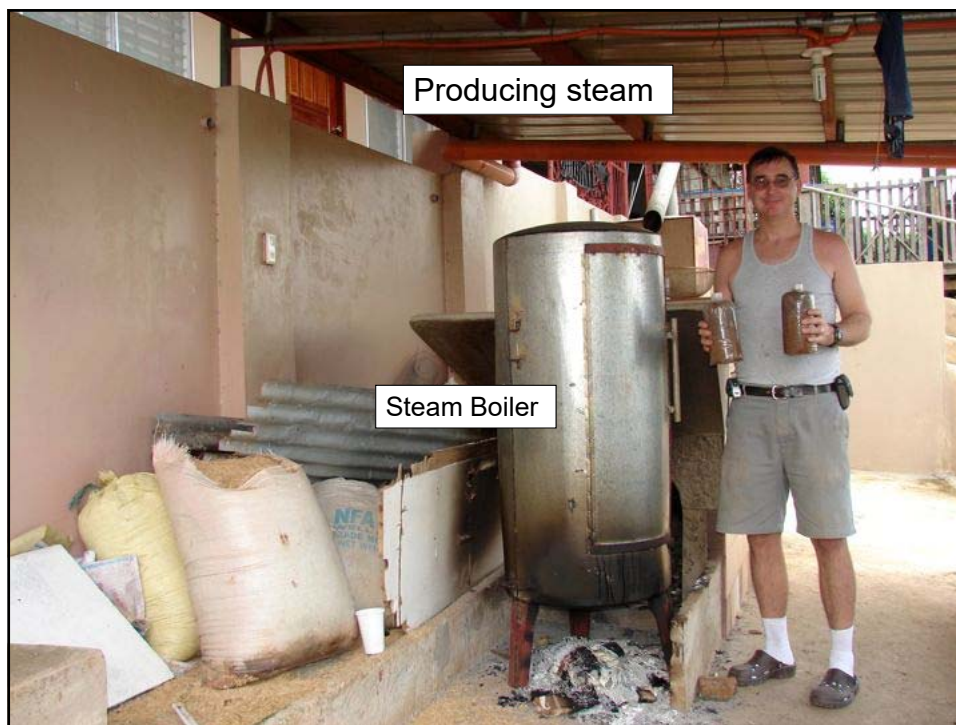




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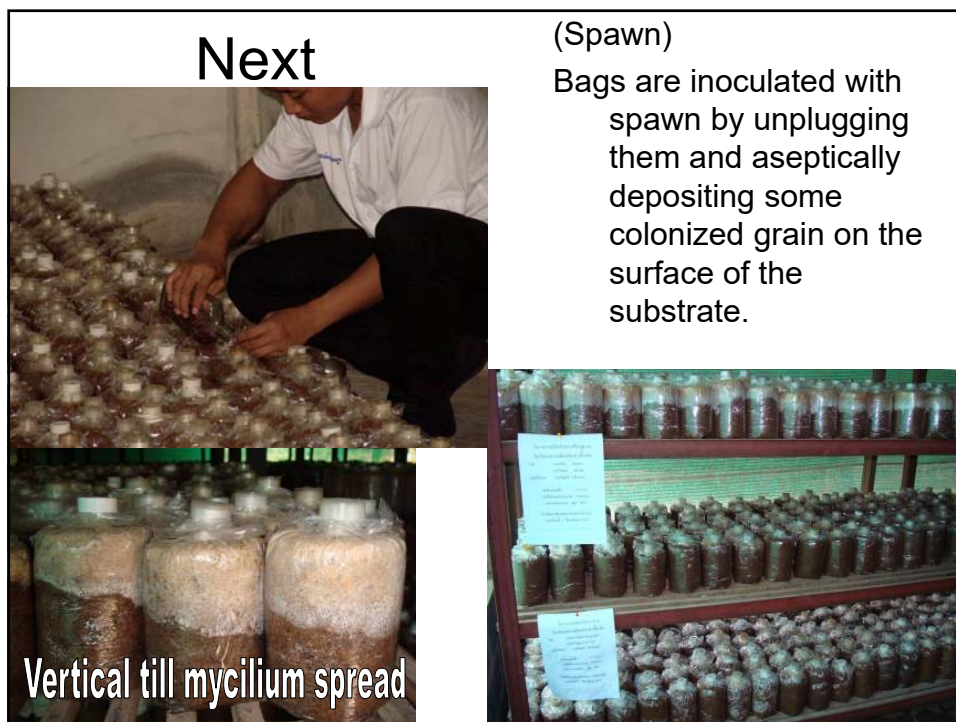


Sterilize the substrate bag in a steam boiler for 3-4 hours. Allow the substrate to cool before inoculating each of them with well-colonized sorghum grain. (Spawn)













Yanagi mushroom



Leechee mushroom









