

Oyster Mushroom Cultivation, locally adapted method

Step by step cultivation:



1. Filling of substrate in gunny bags.

Description of step 1:

Wheat straw is available in abundance locally and evaluated as an excellent substrate for oyster mushrooms in the area. Already threshed and chopped wheat straw is filled in gunny bags, sealed and soaked in water.



2. Soaking of substrate in water

Description of step 2:

Gunny bags filled with substrate are soaked in water for an hour in order to raise the moisture content of wheat straw. This also rinses the straw from dirt and yellow color of the straw.



3. Draining excess water from substrate

Description of step 3:

The soaked substrate in gunny bags is put in sloping position to drain excess water. The bags are kept in this position for half an hour and pressed with hands to drain yellow colored excess water from the substrate.



4. Checking moisture content of substrate

Description of step 4:

After draining excess moisture, the substrate in gunny bags are emptied on clean concrete surface or plastic sheet and mixed thoroughly. A hand full of substrate is taken and pressed. If drops of water are observed, coming out of substrate pressed in hand, it means that moisture content is higher and is more than the required 60-65%. If not, the moisture content is correct. If the straw is felt dry, then sprinkle some water to attain the desired moisture. If moisture content is higher, aerate the straw by spreading on the plastic sheet or clean concrete surface for some time until the excess moisture is evaporated and the desired moisture level is attained.



5. Filling of substrate in polypropylene bags

Description of step 5:

The water soaked wheat straw having 60-65% moisture content, is filled in steam resistant polypropylene bags. The bags are filled and pressed carefully. The upper open side of the bag is then tightened with a thread or rubber band.



6. Pasteurization of substrate filled bags

Description of step 6:

The straw filled polypropylene bags are put on an internal drum stand inside the steel drum, having water at the bottom. Steam is generated by heating the base of the drum having water inside. The lid of the drum is put on and tightened to trap steam. This process is continued for an hour until the straw filled bags are heated and pasteurized. During this process, the contaminants in the substrate are eliminated. Take the bags out of the drum after completion of the process and put them on shelves in a room to cool down to room temperature.



7. Spawning

Description of step 7:

When the temperature of the pasteurized substrate in bags has lowered down to room temperature, carefully open the bag and add some oyster mushroom spawn. The spawn is spread over the surface of the substrate and sealed again.



8. Incubation for spawn run

Description of step 8:

After the inoculation of substrate with spawn, the sealed bags are put in shelves in a dark room with proper ventilation, for about 30 days. The temperature for spawn run has to be around 24 C°. Usually the required temperature occurs naturally for about two months in district Swat, during the mushroom cultivation season.



9. Removal of poly propylene bag after completion of spawn run

Description of step 9:

When the spawn run has completed i.e. the wheat straw in the bag is completely covered with white mycelia of the oyster mushroom's fungus, the polypropylene bag is then removed carefully. Care must be taken not break the "cake" of wheat straw and fungal mycelia. These cakes are then put in the shelves and sprayed carefully with tap water twice a day or as needed to keep the surface of the cake moistened. Do not let the surface of the cake dry. Also, some moistened gunny bags are kept on the floor or around the shelves to raise the relative humidity of the growth room.



10. Oyster mushrooms produced

Description of step 10:

In a few days after removal of the plastic bags from substrate with abundant mycelia all around, small pinheads of oyster mushrooms become evident on the substrate. The pin heads enlarge and develop into a full grown oyster shaped mushrooms in 3-4 days, ready to harvest. Water must be sprayed on the "cakes" of substrate and mycelia to keep them moistened throughout the growing season. Each cake, can produce 2-3 flushes at different intervals during the growing season.