

FAQs on white button mushroom (*Agaricus bisporus*) crop management

Sl. No.	Question	Answer
1.	What is crop management?	Crop management includes all post-composting operations carried out to raise a healthy and good mushroom crop
2.	What is the optimum rate of spawning in compost and does rate of spawning affects the mushroom yield, if any?	The optimum rate of spawning is 0.5-0.75%, w/w of ready compost. The higher dose of compost does not any specific benefit rather it increases the compost temperature. However, the lower rate slows down the spawn run in compost and it took longer period for spawn run.
3.	What is the best way of spawning?	Spawning can be done by the method of thorough mixing in which the measured quantity of spawn has to thoroughly mixed with measured quantity of compost and filled in polythene bags to accommodate 10 kg compost/bag.
4.	Is the quality of compost dose having some bearings on the post-spawning operations?	Yes, the quality of compost certainly does have some bearing on post-spawning operations. If the moisture content is high then the compost filled bags should be kept loose and open, while if it is having less moisture than little compression of compost is needed along with covering with newspaper sheets and sparing of clean water on paper sheets.
5.	What are the optimum conditions for spawn run?	The spawn run should be carried out at a room temperature of $23 \pm 1^\circ\text{C}$ and CO_2 level of 12000-15000 ppm.
6.	Why casing of spawn run bags is essential for obtaining good crop of button mushroom?	The casing is needed to provide optimum conditions for fructification to occur and it protects the desiccation of compost surface, fulfills the water requirements of the growing mushroom, provides support to the growing mushrooms and last but not the least promotes fructification.
7.	What are the different types of casing material available in India and world?	Throughout the world peat is the ideal casing material because of its high water holding capacity and porosity. However, in India it is not available in plenty and is also not of good quality, and well decomposed farm yard manure, well decomposed spent mushroom compost, decomposed coir pith alone or in different combinations among themselves or with burnt rice husk or garden soil etc are popular in India.
8.	What are the common techniques of casing soil treatment before putting it on spawn run compost?	Casing material has to be wetted thoroughly and leached for 24 hours before giving either the steam treatment at $60-65^\circ\text{C}$ for 6-8 hours or has to be treated with formalin @ 1 l/m^3 (40% formaldehyde) for 24-48 hours by keeping covered with plastic sheet under the sunlight. In later case the casing has to be made free from formalin fumes before its use as casing.
9.	What is the best way and the thickness of casing needed for obtaining a good mushroom crop?	The best way of casing is to level the spawn run compost surface followed by pouring of enough quantity of casing material so that a uniform thickness of 4 cm can be achieved. This can be done by using the iron ring of 4 cm height. The top surface of the casing has to be leveled, followed by light spray of water.

10.	What are the optimum conditions needed after casing till mushroom harvest started?	The optimum conditions for case run (i.e. up to 1 week after casing) are $24 \pm 1^{\circ}\text{C}$, RH-95% and $\text{CO}_2 > 7500$ ppm, while after one week it has to changed to $15-17^{\circ}\text{C}$ (air), RH to 85% and CO_2 to 800-1000 ppm by providing 6 air change of 10-15 minutes/day.
11.	What are pre-requisites for obtaining a good crop of mushroom?	The good crop of button mushroom can be obtained by maintaining the proper hygiene inside the cropping room, tools as well as the labourers involved. The temperature, RH and the CO_2 concentration and their uniformity are very essential parameters for obtaining the good crop of button mushroom.
12.	What is the right way of mushroom harvesting?	Mushrooms should be harvested after achieving the pileus diameter of 4-5 cm by holding them between forefinger and thumb, and rotating in clockwise/anticlockwise direction to disconnect them from mycelia in casing.
13.	What are the post harvest operations needed?	As mushrooms come in flushes the they left some space at the place from where these are harvested; a little addition of casing is advised at the place from where the mushrooms have been harvested, followed by watering as per the need of the season. The aeration has been regulated as per the cropping stage, as 6 air changes are needed in the beginning of cropping which reduced to 4 air changes at later stages.
14.	Are there some precautions for spawning and casing to be followed?	Yes, there are certain precautions, which need to be followed for better crop raising. These are <ul style="list-style-type: none"> • Use of freshly prepared pure culture spawn • Spawning under aseptic conditions • Proper treatment of spawning area and tools with formalin, while hands with dettol • Maintaining good hygienic conditions during spawning by keeping all the doors/windows closed • Casing material should not be sieved but used as such with clumps, which permits more air spaces in casing • Top casing surface should have small mounts and valleys • Care should be taken to prevent re-infection of the casing materials • Store casing material in a sterilized /clean room before use, in polythene bag or synthetic cloth bags • Apply water to casing in a few installments so that water does not run into spawn run compost
15.	What is the thumb rule for getting good mushroom crop?	The mushroom grower's has never to be complacent and has to be critical about the requirements of mushroom as per the phase of growth.