

FAQs on Spent Mushroom Substrate Utilization

Sl. No.	Question	Answer
1.	What is spent mushroom substrate?	Spent mushroom substrate (SMS) is the left over substrate (compost in case of button mushroom) after termination of complete mushroom crop, after which mushroom cultivation becomes unremunerative.
2.	What is total quantity of spent compost/substrate generated in different mushrooms?	The quantity of spent mushroom substrate generated varied from 3-5 times of mushroom produced in different mushrooms. It is 5 times in button mushroom, 3 times in oyster and milky mushrooms, and 3-8 times in paddy straw mushroom. In India total SMS generation is near 5,00,000 MT.
3.	What is the nutritional status of SMS generated from different mushrooms?	Nutritionally SMS is considered as quite rich as it contains (button mushroom SMS) N-P-K in the ratio of 1.9-0.4-2.4% in fresh SMS and 1.9-0.6-1.0 after decomposition for 8-16 months. However, SMS of oyster, milky and paddy straw mushroom is nutritional poor compared to button mushroom SMS.
4.	What are different attributes of SMS?	The SMS of different origin varied in pH (7.28-7.75), conductivity and density, and chloride is the main inorganic anion, which contributes towards its conductivity.
5.	What are the different ways of SMS decomposition?	SMS can be decomposed naturally by filling in pits of definite size in one corner of the farm, by filling in pits followed by covering with 1-1.5ft thick layer of soil or by biodynamic composting which involves provision of proper moisture, nutrients and aeration.
6.	What are the ill effects of SMS if it is thrown as such?	If SMS is thrown as such, it creates nuisance, supports the multiplication of undesired insect-pests, emits out foul smell and the leachate from it causes pollution problem to ground water and the water bodies.
7.	Can it be reused for mushroom cultivation?	The SMS from button mushroom can be used as casing material for button mushroom cultivation after proper anaerobic decomposition for 1.5-2.0 years. Similarly the SMS from shiitake mushroom can be used as substrate for oyster mushroom cultivation after drying, grinding, supplementation with nitrogen rich organic material and CaCO_3 @ 10.0 and 1.0%, respectively.
8.	What are the other uses of SMSs of different mushrooms?	SMS from button mushroom and paddy straw mushroom can be recycled to prepare manure out of it. It can also be used in diseases management in crop plants, reclamation of abandoned site and in preparation of briquettes for their use in boilers. Similarly, the SMS from oyster can be used as feed for animals and as feeding material for vermicomposting and biogas production. The SMS of button, oyster, paddy straw and shiitake mushrooms can be used for bioremediation of chemically polluted sites.

9.	Is the vermicomposting process involving SMS is different from conventional way of vermicompost preparation?	No, it does not differ much?
10.	Can SMS can be converted in to enriched compost for its use in nursery crops or polyhouse crops?	Yes, the SMS can be converted in to an enriched compost by supplementing it with easily available form of nitrogen, potassium and phosphorus sources, which can be used for nursery and polyhouse crops.
11.	Can mushroom cultivation be integrated in to farming system?	Yes, mushroom cultivation can be integrated well in to farming system as the farm waste is used for its cultivation and the SMS generated from its acts as good manure for crop raising.
12.	Is there are any adverse effect of using fresh SMS in field directly without going for its decomposition?	Yes, there are some adverse effects of using fresh SMS as manure in field. It increases the salt concentration on using as fresh, properly decomposed SMS should be used as manure.
13.	What are the benefits of using SMS as manure for nursery, polyhouse and field crops compared with FYM?	In majority of the cases, the use of SMS as manure has been recorded to enhance the yield and quality of the produce. In some cases it has also been recorded to restrict the root borne diseases as well as pests in crop plants.
14.	Can SMS can be sold in market like FYM with proper packaging, labeling etc.	Yes, SMS can be sold in market by mentioning the nutrient composition and method of using on the packaging material.