

Economics of the mycelial biomass production

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The economics of mycelial biomass production in cheese whey and optical synthetic media were evaluated. The cost of production of mycelial biomass in cheese whey medium is less than that of the mycelial biomass produced in optical synthetic media.

Key words : Economics, mycelial biomass production, *Tricholoma* spp.

Uptil-now from the observations of the previous experiments, it is evident that the mycelial biomass could be utilized as an alternative source of protein in the diet of the Indian population. But the utilisation of the mushroom mycelial biomass will require its commercial production. It is well known that the commercial production of the mycelial biomass will be only possible when the economic of the same will be profitable.

In order to find out the economics of the production, the cost of the production of the mushroom mycelial biomass of the three test fungi was determined and the data are given in Table 1.

Table 1. Cost of production of fungal mycelium in 30 ml media

Fungi	Synthetic media		Cheese-whey medium	
	Fresh wt. of mycelium (mg/30 ml)	Cost (Rs.)	Fresh wt. of mycelium (mg/30 ml)	Cost (Rs.)
<i>T. lobayense</i>	1377.0	0.49	1575.0	0.03
<i>T. giganteum</i>	1417.5	0.22	1705.0	0.03
<i>T. crassum</i>	1392.0	0.59	1699.5	0.03

The data in Table 1 revealed that the cost of production of the fresh mycelia in 30 ml of the optimal synthetic media and cheese-whey medium differed widely. The cost of production of fresh mycelium in 30 ml of optima synthetic media of *T. lobayense*, *T. giganteum* and *T. crassum* was Rs. 0.49, Rs. 0.22 and Rs. 0.59 respectively, while the

same in the cheese-whey medium for all the fungi was only Rs. 0.03. The comparative account of the cost of 10g fresh mycelium of the fungi and other common vegetables, fish, meat and chicken was given in Table 2.

Table 2. Cost of 10g fresh mycelium and 10g of other vegetables, fish, meat and chicken.

Fungi and vegetables	Cost (Rs.)	
	Synthetic medium	Cheese whey
<i>Fungal mycelium</i>		
<i>T. lobayense</i>	3.55	0.19
<i>T. gigantium</i>	1.65	0.17
<i>T. crassum</i>	4.23	0.17
Potato		0.40
Cabbage		0.50
Bean		0.50
Tomato		1.00
Spinach		0.30
Carrot		0.60
Beet		0.60
Fish		4.00
Meat (goat)		5.60
Chicken		3.00

The data revealed that the cost of production of fungal mycelium was cheapest among all the vegetables, fish and meat and chicken in cheese-whey medium. In synthetic media, the cost of production was higher than all the vegetables. The cost of production of fungal mycelium of *T. gigantium* was less than those of fish, meat and chicken. The same for *T. lobayense* was less than those of fish and meat but higher than that of chicken. While the same for *T. crassum* was higher than those of fish and chicken but less than that of meat.

These observations further revealed that the cheese-whey, which is discarded and wasted by the people, could be beneficially exploited commercially for the production of the mushroom biomass for the consumption of the common people in future. Similar opinion have been made by Miles and Chang (1988) with regard to the biomass production of *Morchella crassipes* and *Pleurotus sajor-caju* in soybean slurry. So this novel way of utilizing the waste materials for the production of protein rich fungal biomass by bioconversion method should be taken into account in the developing countries for combating the acute protein malnutrition.

REFERENCE

Miles, P. G. and Chang, S. T. (1988). 'Mycomeat' - A Food Produced from Soybean Slurry by Fungal Mycelium in Recent Advances in Biotechnology and Applied Botany. (Ed. by S. T. Chang, K. Y. Chan and N. Y. S. Woo). The Chinese University of Hong Kong, pp. 577-586.

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