

## Comparison of Filamentous Fungus (*Monascus purpureus*) Growth in Submerged and Solid State Culture

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**Abstract :** *Monascus purpureus*, which has a special metabolite with many therapeutic and medicinal properties including antioxidant, antibiotic, anti-hypercholesterolemia, and immunosuppressive properties, is a traditional Chinese fermentation fungus and is used as a natural dietary supplement. Production of desired metabolites actually determined by optimized growth which is supported by some factors such as substrates and *Monascus* strains type, moisture content of the fermentation mixture, aeration, and control of contamination issues. In this experiment, *M. purpureus* PTCC5305 was cultured in both the liquid and solid culture medium. The former medium contain YMP (yeast extract, maltose and peptone), PGC (peptone, glucose complex), and GYP (glucose, yeast extract and peptone) medium. After 8 days, the best medium for the cell production was PGC agar medium on solid culture with 0.28 g dry weight of cell mass whereas the best liquid culture was GYP medium with 3.5 g/l dry weight of cell mass. The lowest cell production was on YMP agar with 0.1 g dry weight of cell mass and then YMP medium with 2.5 g/l dry cell weight.

**Keywords :** *Monascus purpureus*, solid state fermentation, submerged culture, Chinese fermentation fungus

**Conference Title :** ICBET 2014 : International Conference on Bioscience Engineering and Technology

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** December 05-06, 2014