

February 28-March 01, 2019
London, UK

Nasir Ahmad Khan et al., J Plant Physiol Pathol 2019, Volume 7
DOI: 10.4172/2329-955X-C1-029

Role of fermentation rate with different intervals for yield improvement of *Pleurotus ostreatus* by using various cellulosic wastes

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The studies were carried out for determination of fermentation rate of different substrates to check the efficacy of oyster mushroom related with yield production. Fermentation and decomposition are a great problem in developing countries like Pakistan. Safe disposal of crop residues is also a great problem which is a current challenge. Edible fungi (*oyster mushrooms*) are natural recycler which converts lignocelluloses wastes into protein rich health food. Mushroom cultivation is a profitable agribusiness and has gained a status of industry in many countries of world including Pakistan. It is easy, low labor requiring, low input requiring, high output providing and low areas requiring business. The maximum mycelial growth was observed is about (40.67 and 29.67) days in two- and four-days fermentations. The maximum number of days for spawn running were taken by *P. ostreatus* (39.00 and 28.57) days in two and four days of fermentation on wheat straw. The maximum average yield of all flushes was taken by *P. ostreatus* was (89.33 kg and 91.67 kg) in two- and four-days fermentation on cotton waste in first flush in minimum no. of days for average yield of all three flushes was recorded. The yield obtained in second flush was (73.00 kg and 82.67 kg) in two- and four-days fermentation respectively. The third flush also gave maximum average yield on cotton waste of about (57.33 kg). During the fermentation process, it was also

noticed that the over fermentation of the substrates (cotton waste, wheat straw) more than four days produced unpleasant smell. In our findings, cotton waste in four days fermentation proved to be the best promising substrate for *P. ostreatus* showed maximum mycelium growth, pinhead, fruiting bodies formation and the average yield of all flushes correspondingly and should be extended in future.

Biography

Nasir Ahmad Khan is working as an Assistant Professor in the Department of Plant Pathology, University of Agriculture, Faisalabad, Pakistan. His field of specialization is in Mycology (Mushroomology). He has produced 30 MSc (Hons) students as a supervisor and 5 PhD students as a co-supervisor. His current focus is to develop technology of mushroom cultivation practices to overcome the problems of malnutrition deficiencies of human health and technology transfer program to small farmers, researchers using various agricultural waste materials to generate income on profitable basis. He has published many research papers in impact factor journals and in international journals. He is also active reviewer of some impact factor journals and conducted many short term training and outreach activities in his university and in rural areas for the betterment to overcome the poverty issues. As well as, he has also published one booklet on mushroom cultivation as a first author which is very informative for community of a people for growing mushrooms on small scale.

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