



ORIGINAL RESEARCH PAPER

Science

SOLID STATE PRODUCTION OF CONIDIA

KEY WORDS: Solid state, basal salt, agricultural product.

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ABSTRACT Solid State production was very cheap and it is very reliable, mycelia convert conidia 10 to 15 days. We can preserve conidia in low temperature for long time use application. Conidia was used for long time this technique was used for the mass production and cheap production of economical important fungi for medicinal purpose used. These are used for enzyme production. Use conidia were kept in cool and dry place for further use these conidia will help us for long time use.

Introduction: - Solid state mass production of fungi was used for large scale production, this solid state production were initial of mass production of industrial important fungi, this technique were used in lab condition and maintain desired temperature of growth of fungi. The ascomycetous fungus *Fusarium graminearum* was an important plant pathogen causing fusarium head blight disease of wheat and barley. the germination of macro conidia microscopically to understand the timing of key events. These events, recorded after suspension of spores in liquid germination medium, Included spore swelling at 2h, germination tube emergence and elongation from conidia at 8h and Hyphal Branching at 24 h. In comparison to liquid culture in solid state production of fungi Under our control atmosphere and less amount of water or basal salt and yeast extract had increased nutrient of fungi. In solid substrate all substrate are easily available in market, and some are available in houses for daily uses. Vascular wilt caused By *Fusarium oxysporum* was a harmful serious disease of chickpea (*Cicer arietinum* L.) It damage approximate loss of ten to fifteen percent annual crops loss. This fungus reached plant via roots. And colonized the xylem vessels and stop translocation of water and minerals. Conidia were reliable for long time, We can use at a solid state production for further use in revival of culture these fungi were useful for solid state production.

Material and methods –In this fungi solid substrate were using for the production of fungi these were Wheat Bran, Sugar Cane Baggase, Rice, Gram Flour, Moong Dal, Urad, Sorghum these were Solid State Substrate. *Cajanus cajan* (pigeon pea) *icer arietinum* (chickpea), In solid substrate we are added 2ml of water as a moistening agent, and other set we are added basal salt [1] and yeast extract. Yeast extract was useful for solid state production. Yeast extract was helpful for fermentation technology. Yeast was common microorganism it can grow on fruit and vegetable processing wastes. Several studies were completed on biotransformation of different agricultural waste into value added products.

Inoculation-Spore suspension of desired fungi inoculated in himedia 50ml containers, suspension conidia was 10⁵ suspensions mixed in vortex mixer and shake 2 minute before using of suspension. In eight substrate moister content of water 1 ML were added for moister contents.

Germination Test-Fungal spore were used in the laboratory for culture maintained and at laboratory and other scales as inoculums for fermentations. Spore swelling and germination processes made major portion of the lag phase, and the subsequent culture morphology and productivity can be greatly influenced by the initial concentration and condition of the spores. An image analysis method has been developed for assessing the viability and the germination characteristics of fungal spores in submerged cultures. Structural variations during germination, that was. Swelling, germ tube formation, and germ tube elongation, are measured in terms of distributions of spore volumes and of germ

tube lengths and volumes. The cultures were grown in 250 ml Erlenmeyer flask that contained 50 ml Basal salt medium. [2]

Viability after storage /Formulation: Harvested Spore powder 30 grams was mixed in hygienic condition with 470grms silica anhydrous. with 200 mg of tenopol for using in reflecting agent. It has kept in 4 degree Celsius for long time viability. After the required duration of storage germination test was performed using 0.1 g of mixture and percent germination was calculated.

Result-

Growth was observed more in maize was good source of protein and amino acids, Sorghum Molases [3] was also good sources of solid state production. chana dal and good sources of solid state production.

Growth substrate basal salt media added in solid substrate It had increased the growth of fungi all the solid substrate growth was increased and basal salt media help the growth of fungi. Basal salt had increased growth of fungi. This fungi was kept in moisture, basal salt was moisture agent, and it contents of micronutrients help us for solid state production.

Growth substrate yeast Extract yeast extract help growth of fungi yeast extract help us for solid state production of fungi yeast extract help media production of fungi in control environment, this help growth for fungi. [4]

Growth substrate yeast extract and basal salt both are minerals and help the growth of fungi. Growth of fungi in yeast extract and basal salt media has been excellent, both constituent of basal salt and media was good,

Discussion:- Basal salt media help us for the growth of fungi, yeast Extract and fungi help us for the growth of fungi, sterile distilled water was good sources of fungi, Fungal growth was dependent in moisture and temperature was necessary for the growth of fungi. In proper mixing of fungi is required for the growth of fungi. Vortex mixer was necessary for the growth of fungi. Vortex mixer help us growth of fungi. it was necessary action of proper mixing of fungi. Its help us for aeration of fungi.

Conclusion:- Solid state production of conidia helps us for the production of large quantity of biomass. It helps us for growth of fungi in other solid media, and its viability was excellent in other media. Solid sate fungi were grown in solid state production with the help of yeast extract and basal salt media fungi grow without restriction and express all phenotypes. The ability of basal salt and yeast extract support the good growth of fungi. Fungi had shown that it is contained the right nutrients but also probability contained them in the right proportions. The fact that the fungi grown on PDA media and solid substrate. In PDA media serve as a good and cheaper media for cultivation of fungi. This study has revealed that the waste materials contain minerals and nutrients

that can meet the nutritional requirement of fungi, thus they can be utilized as alternative materials in the formulation of culture media for the invitro cultivation of fungi. An important advantage of the food crop, used in formulating the various media.

Reference:-

- 1- Ruth AO, Gabr iel A, Mirrila EB (2012). Basal media formulation using Canavalia ensiformis as carbon and nitrogen source for the growth of some fungi species. J. Microbiol. Biotech. Food Sci. 1: (4)1136-1151
- 2- NeaguDA, JacquelineD, Phillipe T, Carmen S(2012)Trichoderma Reesei Cellulase produced by Submerged versus Solid State fermentations.Bulletin UASVM agriculture,6
- 3- J, Sarlin Rosamma P (2013). A molasses based fermentation medium for marine Pathissery yeast biomass production.Int. J. Res. Mar. Sci 2(2):39-44
- 4- Stanly PF, Pradeep BV (2013). Optimization of pigment and biomass production from fusarium moniliforme under submerged fermentation conditions. Int. J. Pharm Pharm Sci 5(3): 526-535.