COMPARISON OF ALTERNATIVE CULTURE MEDIA FOR FUNGI GROUWTH

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Culture medium supplies the nutrients suitable for the growth of microorganisms. Growth of microorganisms with constant subcultures aiming let them readily available to laboratory works is a method that uses a large amount of culture medium. Alternative culture media can be prepared using cheaper or waste materials that can reduce costs. The objective of this study was to test alternative formulations to reduce the cost of the culture medium used for the growth fungi in the Laboratory of Molecular Microbiology (LMM) of UFSJ. We used filamentous fungi from the LMM collection. These fungi were isolated from the soil of the *Campus* of the UFSJ and is being used and characterized in other works developed in the LMM. We performed two assays. In the first assay we compare the standard medium Sabouraud Dextrose Broth (SDB) with the following liquid media: 40g commercial sugar + 10g soy extract (Ac+S), 40g commercial sugar + 10g tailings brewer's yeast (Ac+Lev), 10g soy extract + 4% glycerin (Gli+S), 4% glycerin + 10g tailings brewer's yeast (Gli+Lev) and 40g sludge obtained from sewage treatment plant (STP). In this assay we used three fungi: F2, F3 and F8. The fungi were incubated in Erlenmeyer flasks containing 50mL of medium during 15 days under agitation at 120rpm and 28°C. In the second assay we used six fungi (F7, F12, F15, F17, FA6 and FA7) and solid media to comparing the standard Sabouraud Dextrose Agar (SDA) media with the alternative formulation that presented higher fungi growths in the first assay. The fungi were incubated during 20 days at 28°C. The purpose of the second assay was to test the viability of the alternative medium that showed the best results in the first assay for the use as medium to maintain growing fungi. For the two assays the mycelium was separated and dried at 60°C until constant weight. The assays were performed in triplicate and the weight data was analyzed using the Tukey test. The results of the first assay showed that the best alternative medium was the Ac+Lev, that presented higher efficiency for the fungi mycelium production, even when compared with the standard medium SDB. The results of the second assay confirmed the feasibility of using the alternative medium Ac+Lev, as it presented higher efficiency of mycelium production for 5 of the 6 used fungi when compared with the standard medium SDA. We concluded that we can use the Ac+Lev medium to keep the fungi viable for the using in experiments performed in the laboratory.

Keywords: *culture media*, *fungi*, *growth*

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