

TITLE: MYCELIAL GROWTH OF WOOD ROT FUNGI IN FUNCTION OF TEMPERATURE.

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ABSTRACT: Wood rot fungi, are able to degrade lignocellulose. Among them, thermophilic fungi are of interest because their enzymes are active at high temperatures. However, the cultivation of thermophilic fungi is not easy on a large scale. An alternative is the search for native fungi of tropical regions, which can be tolerant to temperatures above 30°C and able to produce enzymes thermotolerant too. The objective of this work was to evaluate the mycelial growth of fungi in function of temperature. The wood samples were collected in an abandoned sawmill in Bagre, Pará. Fragments of these samples were disinfested and transferred to DRBC agar. The resulting isolates were transferred to Potato Dextrose Broth (PDA) plates in order to obtain pure cultures. The treatments were arranged in a completely randomized design (CRD), composed by a 12x4 factorial scheme, consisting of isolates B1b, B1c, B1d, B2, B3, B4, B5, M1, M2, M4 and M5 subjected to the following temperatures: 25 (control), 30; 35 and 40°C, with 3 repetitions for each treatment. Five discs (5 mm) were removed from the colonies and transferred to Erlenmeyer flasks containing 50 ml of PDA. The cultures were incubated for 7 days at the different temperatures (25, 30, 35 and 40°C). Then, the mycelial biomass was washed with deionized water and dried at 60°C for determination of the respective dry weight. After variance analysis, the results were evaluated by Tukey test for isolates, Scott Knott test for temperatures and regression analysis. Most of the isolates (B1b, B1d, B2, B3, B4, B5, M1, M4 and M5) showed biomass production at 35°C equal to 25°C. These isolates are good candidates for future studies on the production of thermotolerant enzymes. The production of biomass at 40°C was much lower for all isolates. Only 4 isolates showed biomass production above 10 mg (B1b, B3, and B5). A further test will be needed to evaluate the effect of temperature in the range between 35 and 40°C.

Keywords: Fungi decomposers, wood decomposition, enzymes.

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