Title: GROWTH RATE AND MYCELIAL MYCELIAL MASS OF HYBRIDS OBTAINED BY CROSSING CULTURES MONOSPORIC MUSHROOM EDIBLE SHIITAKE

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Abstract

The edible mushroom *Lentinula edodes* (shiitake) has been produced in Brazil for more than two decades, but most are marketed strains from other countries. There is a need to obtain new strains more adapted to the Brazilian climate, which would allow an increase in the production of shiitake. This work evaluated the mycelial growth rate and mycelial mass production of different hybrids of shiitake obtained from the crossing of monosporic cultures. For the hybrids were isolated spores of different strains of *L. edodes*, these spores were placed in petri dishes containing PDA culture medium, after germination of the spores, the single spore cultures were obtained, these were crossed through direct contact mycelium. For mycelial growth test mycelial mass and a disc 5 mm in diameter obtained in hybrid crosses were basidiospore transferred to petri dishes containing PDA culture medium. Every 48 hours was recorded position of the mycelium on the plate, making up a tag mycelium around the outside of the bottom plate. After 7 days of cultivation the distances were recorded between the markings, allowing the calculation of the average speed of mycelial growth in mm / day. At the end of evaluation, the mycelium was collected, and stored in a 50 ml becker containing 10 ml of distilled water, the medium was melted in a microwave oven at full power for 5 minutes and then filtering on 200 mesh sieve . The mycelium was transferred to preweighed filter paper and stored in an incubator at 60 ^{0}C for 48 hours. To obtain the dried mycelial mass, more paper mycelium was weighed and the mass of the paper was subtracted to obtain only the mycelium mass. Differences were observed in mycelial growth rate in hybrid function ranging from 2.33 to 8.67 mm / day. The highest speed of mycelial growth was the HB06 with 8.67 mm / day, exceeding that of their parents LE3 and LE6 with mycelial growth of 5.67 and 6.67, respectively. With respect to the hybrid mycelial mass differences were observed between 0.005 and 0.071 g / 7 days. The hybrid HB50 had the highest mycelial mass of 0.071 g / 7 days, surpassing the production of its LE1 and LE6 parents who produced 0.056 and 0.067 g / 7 days, respectively. Strains with greater speed of mycelial growth, they are more competitive with the competitor fungi, reducing the loss of contamination of substrates. The result of *in vitro* tests show that we can obtain new strains of shiitake with higher characteristics to their parents.

Keywords: shiitake, mycelial mass, mycelial growth.

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