

Title: BROMATOLOGICAL CHARACTERIZATION AND BETA-GLUCAN CONTENT OF *LENTINULA EDODES* STRAINS (SHIITAKE) GROWN ON EUCALYPTUS LOGS

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Abstract

Lentinula edodes is a high quality food, rich in proteins, vitamins, and minerals and poor in calories and fat. However, its nutritional value is variable according to the strain, processing after harvest, development stage of basidiomata, and cultivation substrate. Beta glucan is a safe and very potent biological response modifier that nutritionally activates the immune response through the Macrophage, Dendritic and additional immune cells to yield various therapeutic effects. Shiitake mushrooms containing β -glucans may be beneficial for human health; they have been used in the treatment of cancer, hypertension, and high cholesterol levels. Thus, the objective of this study was to carry out the bromatological characterization from six *L. edodes* strains (LE-1, LE-2, LE-3, LE-4, LE-5, LE-6) and determine the total content of β -glucan in the fruiting bodies. Each shiitake strain was inoculated into 10 logs of *Eucalyptus*, 1m in length and 13 to 20 cm in diameter. The logs were maintained at 25°C \pm 3 and relative humidity of 75-90%, for 6 months. After that, fruiting induction mushroom production were carried out according to standard procedures for shiitake cultivation in wood logs. The mushroom samples were dehydrated and triturated to evaluate the chemical composition and β -glucan content. According to the results obtained, it was verified that the nutritional properties of *L. edodes* (raw protein, ethereal extract, ashes, and raw fiber) are influenced by the different strains. Le5 presented the higher protein and ashes content, with 21.76% and 5.67%, respectively, while Le4 showed the higher content of ethereal extract (0.25%) and raw fiber (11.47%). Concerning concentration of β -glucan, Le3 was the best strain, with 38.73%. Differences in bromatological and β -glucan content between strains suggests the possibility to get new hybrids of higher quality by combining them in a breeding program.

Keywords: chemical composition, mushroom, shiitake

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