

**Title: AGRICULTURAL WASTE FOR BIOMASS PRODUCTION OF THE *Cunninghamella phaeospora***

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Fungal biomass has been the subject of research in recent years considering its potential use as a source of chitin, chitosan, lipids, single cell oil and renewable energy. Species of Mucorales have rapid growth and many species of the genus *Cunninghamella* has demonstrated the ability to accumulate high percentage of lipids in their mycelium. Many substrates have been tested in order to reduce production costs and increase value to the final product. The agro industrial wastes are excellent sources of carbon and nitrogen necessary for the growth of these microorganisms. Tomatoes have in its constitution carbohydrates, proteins, lipids, vitamins and minerals such as potassium, phosphorus, magnesium and calcium. In order to evaluate the production of biomass by *Cunninghamella phaeospora* in this work were used tomatoes discarded for human food use. Four different compositions were tested: hydrolyzed tomatoes and tomatoes juice with or without addition of sugar cane molasses (4%), the medium for Mucorales was used as standard. The hydrolyzed tomatoes were obtained from the mixture of 1 kg of waste tomatoes with 3L 2% v/v H<sub>2</sub>SO<sub>4</sub>. The mixture was autoclaved at 121°C for 2h and filtered on Whatman paper No. 1, pH was adjusted to 6.0. To make tomatoes juice media was used 1kg of tomatoes triturated in a blender in 3L of distilled water, filtered, adjusted to pH 5.4 and autoclaved. Spore suspension (10<sup>7</sup>/mL) was inoculated and incubated in orbital shaker for 120 hours at temperature of 28°C. After growth, the cultures were collected by filtration and the biomass washed 3 times with distilled water and then lyophilized and weighed. According to the results the *Cunninghamella phaeospora* showed better growth on tomatoes juice medium added with sugar cane molasses. Production of fungal biomass was higher than when grown in the medium subjected to hydrolysis, suggesting that the hydrolysis process affects medium constituents.

Key words: Mucorales, molasses, tomato waste medium.

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