

# Characterization of cellulose biofilm obtained from production of Kombucha

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Kombucha is fermentation of green tea with sugar that results in a probiotic drink and cellulose biofilm, in addition to alcohol, acetic acid and carbon dioxide. The mechanism is the same as that of Jun, however the association of yeasts and bacteria is slightly different and moved by sugar, instead of honey. It is possible that the name “Kombucha” originates from Japanese words “kombu” which means seaweed and “cha” that stands for tea. Jun, on the other hand, has an origin shrouded in mysteries, and may come from Tibet or even be a modern invention, according to Sandor Katz explains in his book “art of fermentation”. In this study, research was carried out on the sugar type influence on the growth of cellulose matrix, or biofilm, obtained from the fermentation process of Kombucha. The material was obtained from fermentation process of green tea with sugar. Various parameters can be modified in the production of cellulose, such as temperature, type of tea, type of sugar, process time, among others. In this work, for each process, first, it was necessary to obtain the initial fermented solution: for 4 days the fermentation took place in a mixture of green tea, water, 10% of green already fermented in a previous process and a type of sugar (mascavo, melaço, demerara, crystal and white sugar). Fermentation took place in an environment with a controlled temperature of 25 °C and 60% humidity. In a second step, 40 ml of fermented Kombucha (with no more sugar added) was transferred to each of the petri dishes, containing a microscope slide, to ferment for another 4 days in order to produce a film of cellulose that was analyzed by XRF (X-ray fluorescence), UV-Vis spectroscopy and microscope, in addition to having its density obtained by the Archimedes method. The films produced were pressed and dried in halogen lamp. Fifteen samples were produced. The fermented liquid from the second phase in the petri dishes was characterized with respect to pH, BRIX and density.