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The Ability of Yeast to Produce Antioxidants in Kombucha Can be Accelerated by Using Different Colours of Light

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ABSTRACT Kombucha, is a tea fermented beverage with a high antioxidant value. Three main ingredients for producing kombucha are tea, white sugar and yeast. Tea is a prospective source of antioxidants and phenolic compounds in kombucha. White sugar is nutrition source of yeast, it will be consumed by yeast and their metabolite can help kombucha to accomplish its fermentation. However, the time for making kombucha will cost at least 30 days. Thus, how to shorten the production cycle and accelerate the speed of yeast to produce more antioxidants in kombucha has been investigated by this research. The purpose of this study is to show that the ability of yeast to produce antioxidants in kombucha can be accelerated by using three different light colours: blue, red and green. Apart from that, fluorescent lamp and completed dark have been used as a control experiment. During this study, TPC, DPPH and FRAP have been used for testing the antioxidant ability of each sample, and HPLC has been used as quantitative analysis. ANOVA and response surface methodology were used for data analysis purpose.