

## ABSTRACT

**Background** Cancer is a disease caused by free radicals entering the body. In Indonesia in 2013 stated that 12.7 million cases of cancer occurred. Antioxidant compounds can reduce the amount of free radicals in the body in addition to natural antioxidants in the body. Antioxidant active compounds can be found in several plants, one of which is arabica leaves containing flavonoids, tannins, and polyphenols. The purpose of this study was to analyze the analysis of caffeine, tannin, antioxidant activity and organoleptic value of Arabica (*Coffea arabica*) leaf tea ready for consumption with fructose sugar as a sweetener. **Method** of this study used experimental studies with Completely Randomized Design (CRD) test data on nutrient analysis using Mann Whitney and Test Statistics on panelists and antioxidants using One Way Anova. **Result** showed that coffee leaves contained positive caffeine and tannin with a moisture content of 4.85% and ash content of 7.83%. Arabica leaves have a strong antioxidant value of 0.60 mg / ml, equivalent to 2.19 mg of vitamin C / 100 grams of leaves. The hedonic values show that the weight of tea, sugar and boiling time have a significant effect ( $p < 0.05$ ) on taste and level of preference. Based on the value of hedonic quality of tea, sugar and boiling time, the effect of  $p (< 0.05)$  on aroma and taste was significant. **Conclusion** of this study is that the formulations of F1 and F2 significantly influence caffeine, tannin, antioxidant activity increases and there are differences in the ratio of weight of tea, fructose sugar, and boiling time to organoleptic values of taste, aroma and level of preference which tend to increase.

Keywords: tea, caffeine, tannins, antioxidant activity, arabica leaves