

## **ABSTRACT**

*The purpose of this research is to obtain the effect temperature and long-time enzymatic oxidation leaves of papaya the characteristics of herbal tea mix papaya leaf and red ginger as functional food that is beneficial for health. Benefits is research is expected to provide information about the diversification of functional beverages based on leaves of papaya and red ginger and increase the economic value of papaya leaf and red ginger.*

*The experimental design was randomized block design (RBD) with 3x4 factorial patterns repeats two times, followed by further testing of duncan. Variables of temperature (27 ° C, 30 ° C, 35 ° C) and long-time enzymatic oxidation (L) nemely (1 hour, 2 hours, 3 hours, 4 hours).*

*Preliminary research results show the antioxidant activity of papaya leaf material obtained  $IC_{50}$  was 1750,690 ppm and red ginger  $IC_{50}$  was 425,508 ppm. Based on the results of organoleptic test on preliminary research, obtained the best ratio of papaya leaves and ginger is 70:30 ratio. Based on the results of the main research, the temperature of enzymatic oxidation (S) effect on water content, ash content, flavor attribute and aroma. Long time of enzymatic oxidation (L) has an effect on water content, ash content, color and aroma attributes. The interaction of temperature and long-time of enzymatic oxidation has an effect on water content, ash content and aroma attribute. The results of the antioxidant activity test on selected product  $s_{1l_1}$  (enzymatic oxidation temperature 27°C and duration of 1 hour oxidation enzymatic) show that the selected product had weak antioxidant activity at  $IC_{50}$  of 359,609 ppm.*

*Keywords: enzymatic oxidation, herbal tea, papaya leaf, red ginger*