

## ABSTRACT

Moringa leaves (*Moringa oleifera*) have high antioxidant potential; however, they possess a less favorable taste, necessitating a combination with mint leaves (*Mentha piperita*) to improve their sensory profil. This study aims to analyze the influence of variations in mixture ratios and oven-drying durations on phenolic content, antioxidant activity, and the organoleptic properties of herbal tea. The research method utilized a 3x3 factorial Completely Randomized Design (CRD) with ratio variations (25% mint leaves : 75% moringa leaves, 50% mint leaves : 50% moringa leaves, and 75% mint leaves : 25% moringa leaves) and drying durations at a temperature of 60°C (0, 120, and 150 minutes). Research parameters included moisture content, weight loss, phenolic compounds, antioxidant activity, and organoleptic testing. Data were analyzed using ANOVA and the DMRT post-hoc test; the results indicated that both drying duration and variations in the mixture of mint to moringa significantly affected phenolic content and antioxidant activity. Statistical analysis showed a significant interaction between these two factors on IC50 values and inhibition percentage, but no significant interaction was found for total phenolic compounds. The optimal condition was obtained with the P1S1 treatment combination (75% moringa leaves and 25% mint leaves) with a drying time of 120 minutes. This combination produced antioxidant activity in the very strong category with an IC50 value of 7.38 ppm and a high phenolic content of 29.02 mg GAE/g. Organoleptically, panelists preferred the balanced ratio of 2:2 (50% mint leaves : 50% moringa leaves):

**Keywords:** *Moringa Oleifera, Mentha Piperita, Herbal tea, Thermal degradation.*