

ABSTRACT

Yeremia Tista Malca Maritza, 2026. The Effect of Adding Lemon and Pineapple to Beetroot-Infused Water on Antioxidant Activity, Potassium Content and Organoleptic Quality for People with Hypertension.

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The WHO (2021) states that 77% of deaths caused by non-communicable diseases occur in low- and middle-income countries. To prevent hypertension, the WHO recommends consuming a healthy diet rich in fruits and vegetables—such as beetroots, lemons, and pineapples—which provide nutrients like potassium and fiber that help control blood pressure; these fruits can be used to make infused water. This study aimed to analyze the effect of adding lemon and pineapple to beetroot infused water on antioxidant activity, potassium content, and organoleptic quality for individuals with hypertension. This was a laboratory-based experimental study utilizing a Completely Randomized Design (CRD) with four treatment levels, each replicated three times. Statistical analyses included the Kruskal-Wallis test for antioxidant activity, Analysis of Variance (ANOVA) for potassium levels, and the Kruskal-Wallis test for organoleptic quality (color, aroma, and taste) at a 95% confidence level. The addition of lemon and pineapple to beetroot infused water resulted in significant differences in organoleptic quality, specifically between the control treatment (P0) and treatments P1, P2, and P3. The optimal treatment involved the addition of lemon and pineapple, yielding the highest organoleptic scores for color, aroma, and taste (3.20, 2.90, and 1.85, respectively), along with an antioxidant activity (IC50) of 101.52 ppm and a potassium content of 1.819 mg. The study demonstrated that adding lemon and pineapple to beetroot infused water increased both antioxidant activity and potassium levels. Analysis of organoleptic quality indicated that increasing the proportion of lemon and pineapple in the product improved panelist acceptance regarding color, aroma, and taste.

Keywords: Antioxidant activity, beetroot, infused water; potassium content, lemon, organoleptic quality, pineapple.