

## ABSTRAK

Hipertensi menjadi penyebab kematian nomor satu di dunia setiap tahun. Salah satu faktor pemicu hipertensi yaitu pola konsumsi tinggi natrium dan lemak jenuh yang dapat dicegah dengan pangan alternatif biskuit berbahan dasar kulit buah naga merah (*Hylocereus polyrhizus*) dan pisang (*Musa paradisiaca*). Kulit buah naga merah masih sangat jarang dimanfaatkan, tinggi kalium dan antioksidan, serta rendah natrium. Buah pisang juga mengandung tinggi kalium dan terbukti dapat menurunkan tekanan darah. Tujuan dari penelitian ini adalah untuk menganalisis pengaruh substitusi tepung kulit buah naga merah dan tepung pisang terhadap kandungan gizi, daya terima dan nilai ekonomi pada biskuit dapat mencegah hipertensi.

Penelitian ini menggunakan desain eksperimental murni dan eksperimental semu. Eksperimental murni yaitu rancangan acak lengkap (RAL) dengan lima taraf perlakuan pada penelitian pendahuluan dan empat taraf perlakuan pada penelitian lanjutan. Eksperimental semu dilakukan dengan uji organoleptik. Hasil uji organoleptik penelitian lanjutan dianalisis secara statistik dengan uji *Kruskal Wallis* dan uji lanjutan *Mann Whitney*.

Hasil uji organoleptik menunjukkan biskuit dengan daya terima tertinggi adalah F3 dengan substitusi tepung kulit buah naga 10% dan tepung pisang 10%. Substitusi tepung kulit buah naga dan tepung pisang memberikan pengaruh yang signifikan terhadap tekstur ( $p=0,000$ ) dan rasa ( $p=0,007$ ) pada biskuit, sementara tidak terdapat pengaruh signifikan terhadap mutu warna ( $p=0,976$ ) dan aroma ( $p=0,629$ ). Energi dan lemak biskuit F3 sudah sesuai standar nasional Indonesia (SNI) dan dapat memenuhi 24% AKG energi; 36,74% AKG lemak dan 10,1% AKG kalium dalam sajian 100 g. Hasil perhitungan nilai ekonomi menunjukkan bahwa biskuit F3 memiliki harga paling mahal.

Biskuit dengan substitusi tepung kulit buah naga 10% dan tepung pisang 10% berpotensi menjadi alternatif *snack* untuk mencegah hipertensi, namun masih perlu pendalaman mengenai pemilihan bahan untuk biskuit agar penurunan nilai gizinya dapat diminimalisasi dan agar nilai ekonomi tidak terlalu mahal. Rekomendasi konsumsi harian untuk produk ini adalah 50 g/hari.

**Kata kunci:** biskuit, hipertensi, tepung kulit buah naga, tepung pisang

**ABSTRACT**

Hypertension become the number one causing death in the world every year. One of the factors causing hypertension is a consumption pattern with high sodium and saturated fat. Hypertension could be prevent by alternative food consumption in the form of biscuits made from red ptaya peel (*Hylocereus polyrhizus*) and bananas (*Musa paradisiaca*). The red pitaya peel is a waste that is still very rarely used, high in potassium and antioxidants, and low in sodium. Bananas also contain high potassium and had been proven to reduce blood pressure. The purpose of this study was to analyze the effect of substitution red pitaya peel flour and banana flour on nutritional content, acceptability and economic value of biscuits so that this product can be used to prevent hypertension.

This study carried out using true-experimental and quasi-experimental design. The true-experimental was carried out with a completely randomized design (CRD) consisting of 5 (five) levels treatment in the preliminary study and 4 (four) levels of treatment in further research. Quasi-experimental experiments were performed with organoleptic testing. Organoleptic test results in further research were analyzed descriptively and inferentially using the *Kruskal Wallis* test and continued with *Mann Whitney* test.

Organoleptic test results showed the biscuits formula with the highest acceptability were F3 with 10% substitution of red pitaya peel flour and 10% substitution of 10% banana flour. The substitution of red pitaya peel flour and banana flour had a significant effect on the texture ( $p = 0,000$ ) and taste ( $p = 0.007$ ) of biscuit products, while there was no significant effect on color quality ( $p = 0.976$ ) and aroma ( $p = 0.629$ ) . The energy content and fat of biscuits are in accordance with Indonesian national standard (SNI), and the best formula (F3) have fullfilled 24% RDA of energy; 36.74% RDA of fat and 10.1% RDA of potassium in a serving of 100 g. The economic value calculation result shows that the F3 biscuits have the most expensive price.

So, it can be concluded that biscuits with 10% red pitaya peel flour substitution and 10% banana flour substitution have the potential to become alternative snacks to prevent hypertension, but there is still need more to explore the selection of ingredients for biscuits so that the decreased nutritional value could be minimized and the economic value not too expensive. Recommended daily consumption for this product is 50 g /day.

**Keywords:** banana flour, biscuit, hypertension, red pitaya peel flour