ABSTRAK

PEMBUATAN DAN KARAKTERISASI *LEATHER* TEMU MANGGA (*Curcuma amada*) - *XYLITOL* SERTA BIOAKTIVITASNYA TERHADAP BAKTERI *Streptococcus mutans*

Karies gigi merupakan masalah kesehatan mulut yang dialami 3,5 miliar orang di dunia. Karies gigi disebabkan oleh adanya aktivitas dari bakteri *Streptococcus mutans*. Temu mangga (*Curcuma amada*) yang mengandung senyawa kurkuminoid dan *xylitol* diketahui berpotensi menghambat pertumbuhan bakteri *Streptococcus mutans*. Maka dari itu, dilakukan pengembangan produk olahan pangan fungsional berbentuk *fruit leather* berbahan dasarkan temu mangga (*Curcuma amada)* dan *xylitol* yang diketahui memiliki aktivitas antibakteri dan berpotensi menghambat bakteri *Streptococcus mutans* sebagai penyebab karies gigi. Pada penelitian ini dilakukan pembuatan *fruit leather* dengan lima variasi penambahan temu mangga dan *xylitol* yaitu 80:20, 70:30, 50:50, 30:70, 20:80%, lalu dilakukan analisis karakteristik, uji organoleptik dan uji aktivitas antibakteri. Metode yang digunakan untuk mengetahui karakteristik meliputi penentuan kadar air (metode *thermogravimetri*), jumlah gula (sukrosa) (metode *luff schoorl*), kadar cemaran logam menggunakan instrumen AAS (*Atomic Absorption Spectrophotometer*). Metode yang dilakukan untuk mengetahui aktivitas antibakteri yaitu difusi cakram. Hasil penelitian menunjukkan variasi rasio penambahan temu mangga dan *xylitol* mempengaruhi kadar air, jumlah gula (sukrosa), dan cemaran logam. Semakin besar penambahan temu mangga meningkatkan kadar air, dan menurunkan nilai kadar gula, sebaliknya dengan *xylitol*. Selain itu, variasi rasio penambahan temu mangga dan *xylitol* mempengaruhi karakteristik sensoris *fruit leather* yang dapat dilihat dari parameter warna, tekstur, rasa dan aroma. Variasi *fruit leather* yang paling banyak disukai panelis yaitu variasi 20:80% dengan variasi penambahan *xylitol* terbesar. Nilai aktivitas antibakteri terbesar yaitu dengan zona hambat sebesar 7,10 mm dimiliki oleh variasi 80:20% dengan variasi penambahan temu mangga terbesar.

Kata-kata kunci: aktivitas antibakteri; *fruit leather*; karies gigi; temu mangga; *xylitol*.

ABSTRACT

PRODUCTION AND CHARACTERIZATION OF LEATHER MANGO GINGER (Curcuma amada) - XYLITOL AND ITS BIOACTIVITY AGAINST Streptococcus mutans BACTERIA

Dental caries is an oral health problem experienced by 3.5 billion people worldwide. Dental caries is caused by the activity of the Streptococcus mutans bacteria. Mango ginger (Curcuma amada) which contains curcuminoid and xylitol compounds is known to have the potential to inhibit the growth of Streptococcus mutans bacteria. Accordingly, a functional processed food product was developed in the form of fruit leather made from mango ginger (Curcuma amada) and xylitol which are known to have antibacterial activity and have the potential to inhibit Streptococcus mutans bacteria as a cause of dental caries. In this study, fruit leather was made with five variations of the addition of mango ginger and xylitol, namely 80:20, 70:30, 50:50, 30:70, 20:80%, then carried out characteristic analysis, organoleptic tests and antibacterial activity tests. The method used to determine the characteristics includes determining the water content (thermogravimetric method), the amount of sugar (sucrose) (the luff schoorl method), the level of metal contamination using the AAS (Atomic Absorption Spectrophotometer) instrument. The method used to determine the antibacterial activity is disc diffusion. The results showed that variations in the ratio of the addition of mango ginger and xylitol affected the water content, the amount of sugar (sucrose), and metal contamination. The greater the addition of mango ginger increases the water content, and decreases the value of sugar content, in contrast to xylitol. In addition, variations in the ratio of the addition of Mango ginger and xylitol affect the sensory characteristics of fruit leather which can be seen from the parameters of color, texture, taste and aroma. The variation of fruit leather that the panelists liked the most was the 20:80% variation with the largest variation of xylitol addition. The highest antibacterial activity value, with an inhibition zone of 7.10 mm, is owned by a variation of 80:20% with the largest variation of the addition of mango ginger.

Keywords: *antibacterial activity; dental caries; fruit leather; mango ginger; xylitol.*