

## PROSES PENGOLAHAN COKELAT TAHAN PANAS DENGAN PENAMBAHAN HIDROGEL BERBASIS KARAGENAN DAN PENGUNAAN PEMANIS GULA SEMUT

### INTISARI

Oleh:

**Ika Nur Safitri Kusumawardani**

**18/425338/TP/12039**

Produk cokelat merupakan produk yang tinggi akan permintaan dan dikonsumsi hampir di semua kalangan. Konsumsi cokelat di Indonesia setiap tahunnya mengalami kenaikan 10%. Karakteristik titik leleh cokelat yang berada pada kisaran suhu 32-34°C menjadi permasalahan yang harus diatasi, pada daerah tropis yang memiliki suhu rata-rata tinggi. Penelitian ini bertujuan untuk mengembangkan pengolahan cokelat tahan panas dengan penambahan hidrogel berbasis karagenan dan penggunaan pemanis gula semut dengan proporsi tertentu. Penggunaan hidrogel berbasis karagenan dan gula semut ditujukan untuk meningkatkan kadar air cokelat agar terjadi peningkatan titik leleh cokelat. Tahapan pengolahan cokelat tahan panas dimulai dengan proses pencampuran bahan, penghalusan, *conching* dengan penambahan hidrogel, dan *tempering*. Perlakuan yang dilakukan adalah variasi proporsi gula semut 0%, 50%, dan 100% dan variasi kadar karagenan 3%, 5%, dan 7% dalam hidrogel. Pada penelitian ini dilakukan pengujian karakteristik cokelat yang meliputi titik leleh, kekerasan, kadar air, ukuran partikel, dan warna yang diuji pada setiap interval 4 hari selama 12 hari penyimpanan. Hasil penelitian ini menunjukkan penambahan hidrogel dan penggunaan gula semut memiliki pengaruh pada nilai kekerasan, titik leleh, kadar air, ukuran partikel, dan warna cokelat. Penambahan kadar hidrogel dan penggunaan proporsi gula semut yang tinggi mampu meningkatkan titik leleh, kekerasan, kadar air, ukuran partikel dan *lightness*. Kekerasan cokelat berkisar 12,09-20,88 N/mm<sup>2</sup>, titik leleh 34,3-38°C, kadar air 1,2-2,3%, ukuran partikel 36,84-80,10 µm, nilai *lightness* cenderung lebih tinggi pada proporsi kadar gula yang tinggi sedangkan untuk nilai *redness*, *yellowness*, hue, dan croma cenderung mengalami fluktuatif. Lama penyimpanan berpengaruh terhadap parameter titik leleh, kekerasam, ukuran partikel, *lightness*, dan chroma. Karakteristik optimal cokelat tahan panas dihasilkan dari variasi kadar gula semut 100% dan kadar kagenan 3% pada hidrogel.

Kata kunci: cokelat tahan panas, hidrogel, karagenan, gula semut

Pembimbing: Dr. Arifin Dwi Saputro, S.T.P.,M.Sc.; Dr. Sri Rahayoe, S.T.P.,M.P.

## PROCESSING OF HEAT RESISTANT CHOCOLATE WITH ADDITIONAL OF CARRAGEENAN-BASED HYDROGEL AND USE PALM SUGAR FOR SWEETENER

### ABSTRACT

By:

**Ika Nur Safitri Kusumawardani**  
**18/425338/TP/12039**

Chocolate are products that high demand and consumed by almost all circles. Consumption of chocolate in Indonesia every year has increased by 10%. The melting point characteristic of chocolate which is in the temperature range of 32-34°C is a problem that must be overcome, in the tropics which have a high average temperature. This research aimed to develop a heat-resistant chocolate processing with the addition of a carrageenan-based hydrogel and the use of palm sugar sweetener with a certain proportion. The use of carrageenan-based hydrogel and palm sugar is intended to increase the water content of chocolate so that the melting point of chocolate also increases. The stages of processing heat-resistant chocolate begin with the process of mixing the ingredients, refining, conching with the addition of hydrogel, and tempering. The treatments were variations in the proportions of 0%, 50%, and 100% palm sugar and variations of 3%, 5%, and 7% carrageenan in hydrogel. In this research, the characteristics of chocolate were tested which included melting point, hardness, moisture content, particle size, and color which were tested at intervals of 4 days for 12 days of storage. The results of this study indicate that the addition of hydrogel and the use of palm sugar have an effect on the value of hardness, melting point, moisture content, particle size, and brown color. The addition of hydrogel content and the use of a high proportion of palm sugar can increase the melting point, hardness, moisture content, particle size and lightness. Chocolate hardness ranges from 12.09-20.88 N/mm<sup>2</sup>, melting point 34.3-38°C, water content 1.2-2.3%, particle size 36.84-80.10 m, lightness value tends to be higher in proportion high sugar content, while the values for redness, yellowness, hue, and chroma tend to fluctuate. Storage time affects the parameters of melting point, hardness, particle size, lightness, and chroma. The optimal characteristics of heat-resistant chocolate resulted from variations in the palm sugar content of 100% and 3% kagenan content in the hydrogel.

*Keyword:* heat resistant chocolate, hydrogel, carrageenan, palm sugar

Mentors: Dr. Arifin Dwi Saputro, S.T.P.,M.Sc.;Dr. Sri Rahayoe, S.T.P.,M.P.