INTISARI

Penelitian ini mempelajari restrukturisasi minyak sawit merah (MSM) dengan berbagai metode gelasi : emulsi gelasi, oleogelasi dengan template emulsi, dan bifasik gelasi. Ketiga metode tersebut digunakan karena dianggap metode restrukturisasi minyak yang sehat dan ramah lingkungan. Gel MSM ini dibuat dengan menggunakan konsentrat protein kedelai (SPC) dan polisakarida (alginat atau karagenan) sebagai penstabil. Gel dikarakterisasi dan diaplikasikan sebagai pengganti *cocoa butter* (50% dan100%) pada selai cokelat. Hasil penelitian menunjukkan bahwa SPC-karagenan menghasilkan gel MSM dengan *oil holding capacity* (OHC), kekerasan, dan kandungan β-karoten yang lebih baik daripada SPC-alginat. Meskipun selai cokelat dengan oleogel template emulsi 100% (SOK100) memiliki kandungan β-karoten, Tm, parameter tekstur, viskositas Casson, dan Casson *yield* yang paling tinggi, namun penerimaan panelis terhadap SOK100 lebih rendah daripada SCB100 (kontrol), SBK100 (bifasik gel 100%), dan SEK100 (emulsi gel 100%). Dilaporkan bahwa penggantian 100% *cocoa butter* dengan bifasik gel (SBK100) menghasilkan selai cokelat dengan sifat yang diinginkan. Hal ini didasarkan pada warna yang mirip seperti yang ditunjukkan oleh nilai ΔE (1,77±0,30), kekerasan (8,28 N), sifat termal (Tm= 38,06^{o}C), dan sifat sensorik dengan sampel SCB100. Berdasarkan penelitian ini, MSM bekerja dengan baik sebagai pengganti *cocoa butter* (100%) jika direstrukturisasi menggunakan metode bifasik gelasi daripada oleogel template emulsi atau emulsi gelasi.

Kata kunci: minyak sawit merah, karageenan, emulsi gel, bifasik gel, oleogel template emulsi

ABSTRACT

This work investigated the impact of different red palm oil (RPO) structuring methods: emulsion gelation, oleogelation, and biphasic gelation. The three methods were used because they were considered healthy and environmentally friendly methods of oil restructuring. These RPO gels were prepared using soy protein concentrate (SPC) and polysaccharides (alginate or carrageenan) as the stabilizer. The gels were characterized and applied as a cocoa butter substitute (50%) and replacer (100%) on a chocolate spread. The results showed that SPC-carrageenan resulted in RPO gels with better oil holding capacity, hardness, and β-carotene content than SPC-alginate. Even though chocolate spread with 100% oleogel template emulsion (OCC100) had the highest β-carotene content, Tm, texture parameters, Casson viscosity, and Casson yield, the acceptance of the panelists for OCC100 was lower than CBC100 (control), BCC100 (100% biphasic gel), and ECC100 (100% emulsion gel). It was reported that replacing l00% cocoa butter with biphasic gel (BCC100) produced a chocolate spread with the desirable properties. This was based on its similar color as shown by its ΔE value (1.77±0.30), hardness (8.28 N), thermal properties (Tm= 38.06^{o}C), and sensory properties to CBC100. Based on this study, RPO worked well as a cocoa butter replacer (100%) when structured using biphasic gelation rather than oleogel template emulsion or emulsion gelation.

Keywords: red palm oil; carrageenan; emulsion gel; biphasic gel; oleogel template emulsion