

Sensory preference and bloom stability of chocolate containing cocoa butter substitute from coconut oil

ABSTRACT

Coconut oil (CNO) is a main source of cocoa butter substitute (CBS). CBS is proposed to improve the appearance, taste of chocolate and increase the stability of chocolate against bloom formation. Therefore, the objective of the research was to determine the effects of CNO substituted at different levels (0%, 1.5%, 3.0% and 4.5%) on physicochemical, sensory acceptance and bloom stability of the chocolate. The TAG composition differed among the chocolate produced. Substitution of CNO in chocolate formulations reduced the melting profile, Tonset (30.72–28.98 °C), Tpeak (36.64–34.39 °C), and Tendset (40.31–36.36 °C). The rheological behavior, Casson yield and Casson viscosity of the chocolate also decreased. The Casson yield and Casson viscosity decreased as amount of CNO substituted increased. In sensory profiling, the scores for the color of chocolate did not differ significantly with control chocolate. However, the glossiness, taste and overall acceptability of chocolate C was more preferred by consumers with the highest amount of CNO (4.5%) substitution. The chocolate containing CNO shows slower rate of bloom formation during storage compared to control chocolate. Chocolate C had the highest stability against bloom formation. This study suggested that CNO substitution at 4.5% has the potential to improve appearance and taste of the chocolate with less effects on the melting profile and rheological behavior. In addition, application of CNO as CBS able to increase the stability of chocolate against bloom formation.

Keyword: Coconut oil; Cocoa butter substitute; Chocolate; Sensory profile; Bloom stability