RINGKASAN

Es krim merupakan *dessert* dengan kandungan gula dan lemak yang tinggi. Pada tahun 2018 - 2020 konsumsi es krim di Indonesia mengalami peningkatan hingga 51,9%. Akan tetapi es krim komersial kandungan serat dan betakaroten yang rendah, untuk meningkatkannya dapat ditambahkan ubi jalar madu. Ubi jalar madu Pasrujambe, merupakan komoditas pangan lokal di Jawa Timur dengan tingkat produktivitas tertinggi mencapai 64,95 kw/ha. Ubi ini tinggi akan serat, beta karoten serta gula total mencapai 53,57%. Dikarenakan ubi yang ditambahkan ke dalam es krim memiliki kadar gula tinggi, maka untuk mendapatkan rasa manis yang pas pada es krim dapat digunakan alternatif pemanis. kombinasi penambahan ubi dengan variasi jenis pemanis dapat meningkatkan karakteristik es krim. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh variasi penambahan ubi jalar madu dan variasi pemanis (sukrosa, madu, dan stevia) terhadap karakteristik fisikokimia dan organoleptik produk es krim serta untuk menentukan kombinasi perlakuan penambahan ubi jalar madu dan jenis pemanis yang menghasilkan karakteristik fisikokimia dan organoleptik es krim yang terbaik.

Penelitian dilaksanakan di Laboratorium Pengolahan Pangan dan Hasil Pertanian dan Laboratorium Pangan dan Gizi Fakultas Pertanian Universitas Jenderal Soedirman. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 2 faktor yaitu penambahan ubi terhadap total susu 100 g (25%, 50%, 75%) dan variasi jenis pemanis (sukrosa, madu, dan stevia). Variabel fisikokimia yang diamati adalah *overrun*, densitas, total padatan, gula total, kadar lemak, antioksidan, dan beta karoten. Variabel organoleptik yang diamati meliputi warna, aroma, rasa, tekstur dan *overall*. Analisis data fisikokimia dengan uji ANOVA (α = 5%) dan uji lanjut DMRT (α = 5%). Sedangkan analisis data organoleptik dengan uji Friedman dan dianjut uji Wilcoxon. Pada kombinasi terbaik diamati sifat fisik tekstur es krim berdasarkan hasil analisis oleh alat *texture analyzer.*

Hasil penelitian menunjukkan bahwa proporsi penambahan ubi terhadap total susu dapat menurunkan *overrun* dan meningkatkan densitas, total padatan, dan kadar beta karoten, sedangkan stevia dapat meningkatkan densitas dan gula total es krim. Kombinasi perlakuan terbaik terhadap karakteristik fisikokimia dan organoleptik es krim berdasarkan hasil perhitungan Indeks Efektivitas adalah M3U2 (pemanis stevia dan proporsi penambahan ubi 50% terhadap jumlah susu) yang memiliki karakteristik fisikokimia dan organoleptik es krim sebagai berikut: *overrun* (36,90%), densitas (0,94 g/ml), total padatan (67,78%), gula total (33,85%), kadar lemak (5,41%), dan kadar beta karoten (8,68 µg/100g). Hasil uji organoleptik kombinasi perlakuan es krim terbaik yaitu warna 3,43 (agak kuning), rasa manis 5,73 (manis), rasa ubi 4,73 (sedang), aroma 3,67 (agak khas ubi), tekstur lembut 4,97 (sedang), dan *overall* 5,17 (suka). Profil tekstur es krim yaitu *hardness* (1,64 N), *adhesiviness* (138,57 Nmm), *cohesivines (*47,69), *chewiness* (52,41 N), dan *gumminess* (78.26 N).

SUMMARY

Ice cream is a dessert with high sugar and fat content. Between 2018 and 2020, ice cream consumption in Indonesia increased by 51.9%. However, commercial ice cream has low fibre and beta-carotene content. To increase these levels, honey sweet potatoes can be added. Pasrujambe sweet potato is a local food commodity in East Java with the highest productivity level reaching 64.95 kw/ha. This sweet potato is high in fibre, beta-carotene and total sugar, reaching 53.57%. Because the sweet potato added to ice cream has a high sugar content, alternative sweeteners can be used to achieve the right sweetness in ice cream. The combination of sweet potato with various sweetener variants can improve the characteristics of ice cream. The aim of this study was to determine the effect of adding honey sweet potatoes and sweetener variants (sucrose, honey, and stevia) on the physicochemical and organoleptic characteristics of ice cream products and to determine the best combination of honey sweet potatoes and sweetener types that produce the best physicochemical and organoleptic characteristics of ice cream.

The study was conducted at the Food Processing and Agricultural Products Laboratory and the Food and Nutrition Laboratory of the Faculty of Agriculture, Jenderal Soedirman University. This study used a Randomised Block Design (RBD) with two factors, namely the addition of sweet potato to 100 g of milk (25%, 50%, 75%) and sweetener variants (sucrose, honey, and stevia). The physicochemical variables analysed were overrun, density, total solids, total sugar, fat content, antioxidants, and beta-carotene. The organoleptic variables analysed included colour, aroma, taste, texture, and overall appearance. Physicochemical data were analysed using ANOVA (α = 5%) and DMRT (α = 5%) tests. Meanwhile, organoleptic data analysis was performed using the Friedman test and followed by the Wilcoxon test. The best combination was observed in the physical properties of ice cream texture based on the measured results using a texture analyzer.

The results showed that the addition of sweet potato had reducing overrun and increasing density, total solids, and beta-carotene content, while stevia as sweetener had increasing density and total sugar content of ice cream. The best combination for the physicochemical and organoleptic characteristics of ice cream based on the results of the Effectiveness Index calculation was M3U2 (stevia sweetener and 50% sweet potato addition to the total milk), which had the following physicochemical and organoleptic characteristics of ice cream: overrun (36.90%), density (0.94 g/ml), total solids (67.78%), total sugar (33.85%), fat content (5.41%), and beta-carotene content (8.68 µg/100g). The organoleptic test results of the best ice cream combination were colour 3.43 (slightly yellow), sweet taste 5.73 (sweet), sweet potato taste 4.73 (moderate), aroma 3.67 (slightly characteristic of sweet potato), soft texture 4.97 (moderate), and overall 5.17 (liked). The texture profile of the ice cream is as follows: hardness (1.64 N), adhesiveness (138.57 Nmm), cohesiveness (47.69), chewiness (52.41 N), and gumminess (78.26 N).