

## KARAKTERISTIK FISIK, KIMIA, DAN SENSORIS, SERTA VIABILITAS SEL PRODUK *JELLY CANDY* PROBIOTIK *BLUE* SPIRULINA DENGAN PENAMBAHAN ASAM SITRAT

### INTISARI

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Permintaan masyarakat akan produk makanan yang lezat dan kaya nutrisi semakin meningkat. Inovasi produk *jelly candy* probiotik *blue* spirulina dikembangkan pada penelitian ini dalam rangka memperkenalkan probiotik dan fikosianin sebagai komponen fungsional yang kaya akan protein dan antioksidan. Untuk memperoleh karakteristik sensoris yang baik, diperlukan penambahan asam sitrat dengan konsentrasi tertentu sehingga produk *jelly candy* dapat diterima oleh masyarakat. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan variasi konsentrasi asam sitrat pada produk *jelly candy* probiotik *blue* spirulina terhadap tingkat kesukaan panelis, karakteristik fisik dan kimia produk, serta viabilitas sel *Lactiplantibacillus plantarum* Dad-13 pada formulasi terpilih.

*Jelly candy* probiotik *blue* spirulina diberikan perlakuan konsentrasi asam sitrat 0,3%, 0,5%, dan 0,74% kemudian dilakukan pengujian hedonic. Hasil menunjukkan bahwa panelis menyukai *jelly candy* probiotik *blue* spirulina dengan variasi konsentrasi asam sitrat 0,5% (b/b), yang dimana kandungan didalamnya; kadar abu sebesar  $1,18 \pm 0,01\%$ , kadar lemak total  $0,27 \pm 0,00\%$ , kadar protein  $13,82 \pm 0,06\%$ , kadar karbohidrat (*by difference*)  $13,82 \pm 0,06\%$ , dan kadar air  $13,17 \pm 0,02\%$ . Penyimpanan pada dua suhu berbeda (4°C dan 30°C) selama 25 hari menunjukkan pengaruh terhadap kadar  $a_w$ , nilai pH, serta tingkat kecerahan produk. Penyimpanan suhu 4°C dapat mempertahankan viabilitas sel *L.plantarum* Dad-13 pada produk *jelly candy* probiotik *blue* spirulina dengan umur simpan selama 64 hari dibandingkan suhu penyimpanan 30°C serta Waktu penyimpanan produk yang semakin panjang selaras dengan penurunan viabilitas sel dalam produk.

Kata kunci : *jelly candy*, probiotik, spirulina, konsentrasi asam sitrat, *Lactiplantibacillus plantarum* Dad-13.

## PHYSICAL, CHEMICAL, SENSORY CHARACTERISTICS, ALONG WITH CELL VIABILITY OF BLUE SPIRULINA PROBIOTIC JELLY CANDY ENHANCED WITH CITRIC ACID

### ABSTRACT

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Public demand for delicious and nutrient-rich food products is increasing. The innovative blue spirulina probiotic jelly candy product was developed in this research in order to introduce probiotics and phycocyanin as functional components that are rich in protein and antioxidants. To obtain good sensory characteristics, it is necessary to add citric acid at a certain concentration so that jelly candy products can be accepted by the public. This study aims to determine the effect of adding variations in citric acid concentration to the blue spirulina probiotic jelly candy product on the panelists' level of preference, the physical and chemical characteristics of the product, as well as the viability of *Lactiplantibacillus plantarum* Dad-13 cells in the selected formulation.

Blue spirulina probiotic jelly candy was treated with citric acid concentrations of 0.3%, 0.5% and 0.74% then carried out hedonic testing. The results showed that the panelists liked the probiotic blue spirulina jelly candy with varying citric acid concentrations of 0.5% (w/w), which contained; ash content of  $1.18 \pm 0.01\%$ , total fat content of  $0.27 \pm 0.00\%$ , protein content of  $13.82 \pm 0.06\%$ , carbohydrate content (by difference)  $13.82 \pm 0.06$ , and water content  $13.17 \pm 0.02\%$ . Storage at two different temperatures (4°C and 30°C) for 25 days showed an effect on the aw content, pH value, and product brightness level. Storage at a temperature of 4°C can maintain the viability of *L.plantarum* Dad-13 cells in blue spirulina probiotic jelly candy products with a shelf life of 64 days compared to a storage temperature of 30°C and the longer product storage time is in line with the decrease in cell viability in the product.

Keyword : *jelly candy*, probiotic, spirulina, citric acid concentration, *Lactiplantibacillus plantarum* Dad-13