



Oleh

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## INTISARI

Penelitian ini bertujuan untuk menentukan formula susu kedelai hitam yang dapat menghasilkan susu-bubuk kedelai hitam dengan sifat fisik dan kimia yang dapat diterima konsumen dengan baik dan mengevaluasi sifat organoleptis susu kedelai rekonstitusinya. Susu-bubuk kedelai dibuat dari ekstrak kedelai hitam dan dilakukan *spray drying* dengan suhu inlet 120°C dan suhu outlet 70°C.

Perlakuan dalam penelitian ini adalah variasi kondisi biji (biji kedelai hitam utuh dan terkupas) dan variasi waktu perendaman (16, 20, dan 24 jam). Analisis yang dilakukan meliputi analisis kimia, fisika dan organoleptis. Kedelai kuning merupakan kontrol dalam penelitian ini.

Hasil penelitian menunjukkan bahwa biji kedelai hitam yang direndam selama 20 jam dalam keadaan terkupas menghasilkan susu kedelai hitam dengan komposisi kimia berdasarkan berat kering terbaik yakni kadar protein 43,02%, kadar lemak 33,06%, kadar abu 5,55%, dan kadar karbohidrat (*by difference*) 18,36%. Kadar air susu kedelai hitam 96,79%. Biji terkupas dipilih karena susu kedelai hitam dengan kondisi ini akan memiliki warna yang lebih baik dan memiliki tingkat penerimaan tinggi pada pengujian organoleptis. Dengan proses *spray drying*, susu kedelai hitam diolah menjadi produk akhir berupa susu-bubuk kedelai hitam dengan komposisi kimia berdasarkan berat kering yakni protein 38,14%, lemak 22,59%, abu 3,45%, dan karbohidrat (*by difference*) 34,17%. Kadar air susu-bubuk kedelai hitam 4,85%. Hasil uji kesukaan menunjukkan bahwa susu rekonstitusi lebih disukai. Namun demikian, proses pengeringan menyebabkan kehilangan pada susu-bubuk yang dihasilkan dan penurunan daya larut rekonstitusinya.

Kata kunci : kedelai hitam, kedelai kuning, kondisi biji, waktu perendaman, susu kedelai hitam, *spray drying*, susu-bubuk kedelai hitam



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## ABSTRACT

The research was aimed to determine the formula of black soybean-milk that can produce black soybean-milk powder with good consumer acceptance on physical and chemical properties and evaluate organoleptic properties of the reconstituted soymilk. The soymilk powder was made from the black soybean extract and spray dried using 120°C inlet temperatures and 70°C outlet temperatures.

Treatment in this research was variation of bean condition (whole and dehulled black soybean) and variation of soaking time (16, 20, and 24 hours). The analysis consists of chemical, physical, and organoleptic analysis. Yellow soybean was treated as control in this research.

The result showed that the 20 hours-soaked dehulled-black soybean produced the best chemical composition of black soybean-milk based on moisture-free basis, that was protein content of 43,02%, fat content of 33,06%, ash content of 5,55%, and carbohydrate (by difference) content of 18,36%. The moisture content of black soybean-milk was 96,79%. Dehulled bean was chosen because black soybean milk with this condition would have a better product color and the highest consumer acceptance on organoleptic test. By spray drying, the black soybean milk became a black soybean-milk powder as the final process with the protein content of 38,14%, fat content of 22,59%, ash content of 3,45%, and carbohydrate (by difference) content of 34,17% based on moisture-free basis. The moisture content of black soybean-milk powder was 4,85%. Hedonic scale test result showed that reconstitute milk was more preferable. However, spray drying caused product losses and solubility decreases.

**Keywords :** black soybean, yellow soybean, bean condition, time soaking, black soybean milk, spray drying, black soybean milk-powder