

**PENGARUH WAKTU PENGOVENAN KACANG KENARI
(*Canarium indicum*) PADA TAHAP *PRE-TREATMENT* TERHADAP
KARAKTERISTIK FISIK DAN KIMIA SUSU BUBUK KENARI**

INTISARI

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Minuman pengganti susu atau yang dikenal sebagai susu nabati mulai banyak dikembangkan. Susu nabati diciptakan terutama untuk orang dengan penderita intoleransi laktosa. Kacang kenari berpotensi dikembangkan menjadi susu nabati karena kaya akan zat gizi yang bermanfaat bagi kesehatan tubuh. Susu nabati tersebut dapat dikeringkan menjadi susu bubuk guna memperpanjang masa simpannya. Sebelum diolah menjadi susu bubuk, kenari harus melalui tahap *pre-treatment*, salah satunya pengovenan. Pengovenan dilakukan dengan suhu dan waktu yang terkontrol. Penelitian ini bertujuan untuk mengetahui pengaruh waktu pengovenan kacang kenari pada tahap *pre-treatment* terhadap karakteristik fisik dan kimia susu bubuk kenari yang dihasilkan.

Bahan yang digunakan untuk membuat susu bubuk kenari dalam penelitian ini adalah kacang kenari, air dan maltodekstrin. Rancangan eksperimen ini menggunakan satu faktor, yaitu waktu pengovenan kacang kenari pada tahap *pre-treatment* (0, 10, 20, dan 30 menit) dengan suhu pengovenan dibuat konstan, yakni 160°C. Sebelum dicampur dengan maltodekstrin, susu cair kenari terlebih dahulu diuji kandungan total solidnya. Total solid tersebut nantinya digunakan dalam perhitungan rendemen. Susu cair kenari selanjutnya dikeringkan menggunakan *spray dryer* sehingga dihasilkan susu bubuk kenari. Susu bubuk kenari yang dihasilkan dianalisis kadar air, kadar protein, kadar lemak, dan kadar abunya serta dilakukan pengujian fisik yang meliputi warna, aktivitas air, keterbasahan, daya sebar, kelarutan, dan *bulk density*.

Hasil penelitian menunjukkan bahwa semakin lama waktu pengovenan kenari pada tahap *pre-treatment*, kadar protein, kadar lemak, dan kadar abu susu bubuk kenari yang dihasilkan semakin rendah, sedangkan kadar air semakin meningkat. Waktu pengovenan kenari yang lebih lama juga menyebabkan susu bubuk kenari yang dihasilkan memiliki kelarutan dan *compacted bulk density* yang lebih tinggi, sedangkan warna, keterbasahan, dan daya sebar lebih rendah. Sementara itu, aktivitas air dan *uncompacted bulk density* susu bubuk kenari tidak dipengaruhi oleh waktu pengovenan kenari pada tahap *pre-treatment*.

Kata kunci: Kacang kenari, pengeringan semprot, sifat fisik, analisis kimia

EFFECT OF CANARY NUTS (*Canarium indicum*) ROASTING TIME AT PRE-TREATMENT STAGE ON THE PHYSICAL AND CHEMICAL CHARACTERISTICS OF CANARY NUTS MILK POWDER

ABSTRACT

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Milk substitutes, also known as plant-based milks, are becoming more popular. Plant-based milk was created especially for people with lactose intolerance. Canary nuts (*Canarium indicum*) have the potential to be developed into plant-based milk because they are rich in nutrients that are beneficial for the body's health. The plant-based milk can be dried into milk powder to extend its shelf life. Before being processed into milk powder, canary nuts must go through a pre-treatment stage, one of which is roasting. Roasting is done with controlled temperature and time. This study aims to determine the effect of canary nuts roasting time in the pre-treatment stage on the physical and chemical characteristics of canary nuts milk powder produced.

The ingredients used to make canary nuts milk powder in this study were canary nuts, water, and maltodextrin. This experimental design uses one factor, which is canary nuts roasting time at the pre-treatment stage (0 minutes, 10 minutes, 20 minutes, and 30 minutes) with the constant roasting temperature (160°C). Before mixing with maltodextrin, the liquid canary nuts milk was first tested for total solid content. The total solid was later used in the calculation of canary nuts milk powder yield. The liquid milk was then dried using a spray dryer to produce canary nuts milk powder. Canary nuts milk powder was analyzed for proximate content including moisture content, protein content, fat content, and ash content, also physical testing, including color, water activity, wettability, dispersibility, solubility, and bulk density.

The results showed that the longer roasting time of canary nuts in the pre-treatment stage, lower the protein content, fat content, and ash content of canary nuts milk powder produced, while the moisture content increased. The longer roasting time of canary nuts also causes the resulting walnut milk powder to have higher solubility and compacted bulk density, while the color (brightness), wettability (in seconds), and dispersibility are lower. Meanwhile, the water activity and uncompacted bulk density of canary nuts milk powder were not affected by the roasting time of canary nuts in the pre-treatment stage.

Keywords: Canary nuts, spray drying, physical properties, chemical analysis