

**DEHIDRASI OSMOSIS DAN PENGERINGAN PADA PENGOLAHAN
BUAH KELAPA (*Cocos nucifera* L.) KERING DENGAN VARIASI
KONSENTRASI LARUTAN GULA SERTA ANALISIS PERUBAHAN
KUALITAS FISIK PRODUK SELAMA PENYIMPANAN**

INTISARI

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Kelapa (*Cocos nucifera* L.) merupakan komoditas perkebunan yg pemanfaatannya untuk pangan cukup luas, yaitu nira sebagai bahan baku gula, air kelapa sebagai bahan baku minuman dan *nata de coco*, dan daging buahnya digunakan untuk santan. Diversifikasi produk olahan dari daging buah kelapa perlu dikembangkan antara lain buah kering. Pada penelitian ini dikembangkan buah kering dari kelapa yang diproses menggunakan dehidrasi osmosis. Tujuan penelitian adalah melakukan dehidrasi osmosis dan pengeringan pada pengolahan buah kelapa kering dengan variasi konsentrasi larutan serta analisis kualitas fisik produk selama penyimpanan. Daging buah kelapa diproses menjadi buah kering dengan tahapan proses perajangan, dehidrasi osmosis, dan pengeringan. Dehidrasi osmosis dilakukan dengan cara perendaman dalam larutan gula dan pada penelitian ini dilakukan pembuatan larutan gula dengan variasi konsentrasi 30, 40, dan 50% brix serta perendaman dilakukan pada suhu 40⁰C selama 4 jam. Selama perendaman diamati perubahan kadar air dan warna bahan. Proses pengeringan buah kelapa menggunakan *cabinet dryer* selama 14 jam pada suhu 40⁰C dan diamati perubahan kadar air dan warna setiap interval waktu 30 menit sekali untuk 5 jam pertama dan selanjutnya setiap 1 jam sekali. Buah kelapa dikeringkan dari kadar air 50% (wet basis) hingga 10% (dry basis). Pengaruh variasi konsentrasi terhadap nilai WL, SG, k, dan h dianalisis dengan statistika. Buah kering yang dihasilkan selanjutnya dikemas vakum dan disimpan pada suhu kamar serta diamati perubahan kadar air, warna, dan tekstur. Data-data yang diperoleh digunakan untuk menentukan nilai *water loss* (WL) dan *solid gain* (SG) pada proses dehidrasi osmosis, nilai laju pengeringan (k) dan laju perpindahan panas konveksi (h) pada proses pengeringan, dan dilakukan prediksi umur simpan. Hasil penelitian menunjukkan kisaran konsentrasi larutan gula 30 – 50% memberikan nilai WL dan SG 33,4% dan 17,5%;, nilai k dan h 0,28 %/menit dan 1.97 W/m²C. Umur simpan produk berdasarkan kadar air adalah 64-113 hari, sedangkan berdasarkan pengamatan secara kualitatif adalah 20 – 30 hari.

Kata kunci : buah kelapa kering, dehidrasi osmosis, pengeringan, umur simpan.

**OSMOTIC DEHYDRATION AND DRYING PROCESS FOR COCONUT
(*Cocos nucifera* L.) AND ANALYSIS OF PHYSICAL QUALITY CHANGES
DURING STORAGE**

ABSTRACT

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Coconut (*Cocos nucifera* L.) is a plantation commodity which utilization for food is quite wide, that is nira as raw material of sugar, coconut water as raw material of drink and nata de coco, and its flesh used for coconut milk. Diversification of processed products from coconut meat needs to be developed, among others, dried fruit. In this study developed dried fruit from coconut that is processed using osmotic dehydration. The objectives of the study were to applied osmotic dehydration and drying on dry coconut processing with variation of solution concentration as well as analysis of physical quality of product during storage. Coconut meat is processed into dried fruit with stages of process chopping, osmotic dehydration, and drying. Osmotic dehydration was done by immersion the material in sugar solution and in this research was made sugar solution with variation of concentration 30, 40, and 50% brix and soaking was done at 40⁰C for 4 hours. During the immersion observed changes in water content and color of the material. The process of drying coconut fruit using cabinet dryer for 14 hours at 40⁰C temperature and observed changes in water content and color every 30 minute interval once for the first 5 hours and then every 1 hour. The coconut fruit is dried from 50% moisture (wet base) to 10% (dry base). The effect of concentration variation on WL, SG, k, and h values was analyzed by statistics. The resulting dried fruit is then packed vacuum and stored at room temperature and observed changes in water content, color, and texture. The data obtained were used to determine the value of water loss (WL) and solid gain (SG) in osmotic dehydration process, drying rate (k) and heat transfer rate (h) in drying process, and prediction of shelf life. The results showed that the concentration of sugar solution 30 - 50% gave WL and SG 33,4% and 17,5%, value of k and h 0,28%/ minute and 1,97 W/m²C. The shelf life of the product based on the moisture content is 64 to 113 days, whereas based on observation is 20 to 30 days.

Keywords : coconut, osmotic dehydration, drying, shelflife.