

ABSTRACT

THE INFLUENCE OF TEMPERATURE AND PRESSURE ON THE RESULTS OF FRYING STAR FRUIT CHIPS (*Averrhoa carambola L.*) USING VACUUM FRYING

By

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Fruit chips are healthy snacks because of their high fiber content. One of the fruit commodities being developed is the starfruit (*Averrhoa carambola L.*) commodity. Starfruit is a fruit that is widely processed into other processed foods, because the fruit is easily damaged and has a relatively short shelf life of 3 to 4 days. Fruit chips are more resistant to storage than fresh fruit because their water content is low and physiological processes no longer occur. The equipment used to make fruit chips is a vacuum fryer which has the advantage of frying fruit into chips. The purpose of this study was to analyze the effect of frying temperature and pressure on product quality in the manufacture of starfruit chips using vacuum frying and to determine the optimal temperature and pressure for frying starfruit chips using vacuum frying. The research method used was an experimental design in the form of a factorial Completely Randomized Design (CRD). Experimental factors in this study used two factors, temperature (T), namely temperature 75°C, 80°C, 85°C and pressure (P) during the frying process namely -68 cmHg, -70 cmHg and -72 cmHg, with as many repetitions as 3 times to produce 27 experimental units. The parameters observed in this study were the analysis of material shrinkage (yield), water content, organoleptic tests, and analysis of storage of starfruit chips. It can be concluded that the optimal choice of temperature and pressure in the operation of a vacuum frying equipment for making starfruit chips is 80°C with a low frying pressure of -72 cmHg. The quality of starfruit chips with a temperature of 80°C and a frying pressure of -72 cmHg was included in the best product category in this study based on overall acceptance which had a material yield value of 13.09%, a moisture content of 4.64%, and a color organoleptic test score of 4.13 (yellow), aroma 3.67 (starfruit aroma is rather strong), taste 4.40 (slightly sweet), crispness 4.00 (crunchy).

Keywords: Chips, Starfruit, Vacuum Frying

ABSTRAK

PENGARUH SUHU DAN TEKANAN TERHADAP HASIL PENGGORENGAN KERIPIK BELIMBING (*Averrhoa carambola L.*) MENGUNAKAN *VACUUM FRYING*

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Keripik buah merupakan makanan ringan yang menyehatkan karena kandungan seratnya tinggi. Salah satu komoditas buah-buahan yang sedang dikembangkan adalah komoditi belimbing (*Averrhoa carambola L.*). Belimbing merupakan buah yang banyak diolah menjadi makanan olahan lain, karena buahnya yang mudah rusak dan umur simpannya tergolong pendek yaitu 3 hingga 4 hari. Keripik buah lebih tahan disimpan dibandingkan buah segarnya karena kadar airnya rendah dan tidak lagi terjadi proses fisiologis. Alat yang digunakan untuk membuat keripik buah adalah penggoreng *vacuum* yang mempunyai keunggulan menggoreng buah menjadi keripik. Tujuan penelitian ini adalah menganalisis adanya pengaruh suhu dan tekanan penggorengan terhadap kualitas produk dalam pembuatan keripik belimbing menggunakan *vacuum frying* serta menentukan suhu dan tekanan optimal penggorengan keripik belimbing menggunakan *vacuum frying*. Metode penelitian yang digunakan yaitu rancangan percobaan berupa Rancangan Acak Lengkap (RAL) faktorial. Faktor Percobaan pada penelitian ini menggunakan dua faktor, suhu (T) yakni suhu 75°C, 80°C, 85°C dan tekanan (P) selama proses penggorengan yakni -68 cmHg, -70 cmHg dan -72 cmHg, dengan pengulangan sebanyak 3 kali sehingga menghasilkan 27 satuan percobaan. Parameter yang diamati dalam penelitian ini adalah analisis penyusutan berat bahan (rendemen), kadar air, uji organoleptik, dan analisis penyimpanan keripik belimbing. Dapat disimpulkan pilihan suhu dan tekanan yang optimal dalam pengoperasian alat *vacuum frying* untuk pembuatan keripik belimbing yaitu suhu 80°C dengan tekanan penggorengan rendah yaitu -72 cmHg. Kualitas keripik belimbing dengan suhu 80°C dan tekanan penggorengan -72 cmHg masuk kedalam kategori produk terbaik pada penelitian ini berdasarkan penerimaan keseluruhan yang memiliki nilai rendemen bahan sebesar 13,09%, kadar air 4,64%, dan skor uji organoleptik warna 4,13 (kuning), aroma 3,67 (aroma belimbing agak kuat), rasa 4,40 (agak manis), kerenyahan 4,00 (renyah).

Kata Kunci: Keripik, Belimbing, *Vacuum Frying*