

## ABSTRACT

**NURUL HAFIANI. B.1510576.** *Physicochemical Characterisation and Betacaroten of Three Pumpkins Variety (Cucurbita sp) with Drum Drying Method*

This research to study the physicochemical properties, nutrient content and betacarotene content of flour of three pumpkin varieties using drum drying method. This research phase consists of two stages, namely step I research and step II research. Step I was carried out to determine the profile of pumpkin per variety containing average, net weight, diameter, circumference, yield of fruit and sugar content in units of brix. The results showed that the average pumpkin reached 398.89 - 2752.75 grams, the net weight reached 272.85 - 2318.85 grams, the length reached 28.5 - 54.5 cm, the diameter with 7.25 - 21, 5 cm, yields 69.24 - 84.28% and sugar content of 6.52 - 9.5 brix. The main research used three varieties of pumpkin that were tested in profile during preliminary research. The analysis carried out was water content, ash, protein, fat, gram, fiber, beta-carotene, yield, water absorption, bulk density, color and starch gelatinization profile. The results of the analysis of the chemical properties of three varieties of flour showed water levels between 9.895 - 17.83%, fruit moisture content 87.51 - 91.12%, while for ash content ranged from 0.25 - 10.95%, protein content required 5.45 - 14.27%, fiber content of 7.4 - 17.29%, fat content of 1.16 - 5.37%, vitamin 36 content, 34 - 65.02% and bekaroten of 0.76 - 2.28 mg / g. The results of analysis of the physical properties of flour three varieties of pumpkin showed water absorption from 5.6 to 8.4 mL / g, density of cages from 0.588 to 0.677 g / mL, fruit yield according to 69.24 - 84.28%, overall flour yield ranged from 5.59 to 6.89%, the yield of net flour was around 7.4 to 8.5%, the color L \* ranged from 72.96 - 81.46, the color of a \* increased from 7.86 to 14.2, the color of b \* varied 44, 14 - 48,25, color c \* 45,51 - 48,89, while for gelatinization profile, at peak viscosity parameters for parang flour is 965 cP, kabocha 1175 cP and butternut 1926 cP, heat viscosity for parang flour 969 cP, kabocha 1177 cP and butternut 1376 cP, breakdown for parang flour -4 cP, kabocha -5 cP and butternut 550,5 cP, final viscosity for parang flour 1579 cP, kabocha 2491,5 cP and butternut 3537 cP, setback for parang flour is 610.5 cP, kabocha 1314,5 cP and butternut 2161.5 cP and peak time for parang flour and kabocha is 13 m and butternut 4,1 m. Past temperature just have in butternut for 55,17 °C

**Keywords:** Yellow pumpkin flour,  $\beta$ -carotene, Drum drying, physico-chemical.

## ABSTRAK

**NURUL HAFIANI. B.1510576.** Karakteristik Fisikokimia dan Betakaroten Tepung Tiga Varietas Labu Kuning (*Cucurbita Sp*) dengan Metode *Drum Drying*

Penelitian ini bertujuan untuk mengetahui sifat fisikokimia, kandungan zat gizi dan kadar betakaroten tepung tiga varietas labu kuning dengan metode *drum drying*. Tahapan penelitian ini terdiri dari dua tahapan yaitu penelitian tahap satu dan penelitian tahap dua. Penelitian tahap satu dilakukan untuk mengetahui profil buah labu per varietas yang meliputi berat rata-rata, berat bersih, diameter, keliling, rendemen buah dan kadar gula. Penelitian tahap dua melakukan uji fisikokimia pada tiga varietas labu kuning Analisa yang dilakukan adalah kadar air, abu, protein, lemak, karbohidrat, serat, betakaroten, rendemen, daya serap air, densitas kamba, warna dan profil gelatinisasi pati. Hasil penelitian tahap satu menunjukkan bahwa berat rata-rata labu kuning berkisar 398,89 - 2752,75 gram, berat bersih berkisar 272,85 - 2318,85 gram, panjang berkisar 28,5 - 54,5 cm, diameter berkisar 7,25 - 21,5 cm, rendemen berkisar 69,24 - 84,28 % dan kadar gula berkisar 6,52 - 9,5 brix. Hasil penelitian tahap dua menunjukkan bahwa analisa sifat kimia tepung tiga varietas menunjukkan bahwa kadar air buah berkisar antara 9895 - 17,83 %, kadar air buah berkisar 87,51 - 91,12 %, sedangkan untuk kadar abu berkisar 0,25 - 10,95 %, kadar protein berkisar 5,45 - 14,27 %, kadar serat berkisar 7,4 - 17,29 %, kadar lemak berkisar 1,16 - 5,37 %, karbohidrat berkisar 36,34 - 65,02 % serta betakaroten berkisar 0,76 - 2,28 mg/g dalam bentuk perhitungan *dry basis*. Hasil analisa sifat fisika tepung tiga varietas labu kuning menunjukkan bahwa daya serap air berkisar 5,6 - 8,4 % (*dry basis*), densitas kamba berkisar 0,588 - 0,677 g/mL (*dry basis*), rendemen buah berkisar 69,24 - 84,28 %, rendemen tepung utuh berkisar 5,59 - 6,89 % (*dry basis*), rendemen tepung bersih sekitar 7,4 - 8,5 % (*dry basis*), Warna L\* berkisar antara 72,96 - 81,46, warna a\* berkisar 7,86 - 14,2, warna b\* berkisar 44,14 - 48,25, warna c\* 45,51 - 48,89, sedangkan untuk profil gelatinisasi pada parameter viskositas puncak tepung labu parang 965 cP, kabocha 1175 cP, dan *butternut* 1926 cP, viskositas panas tepung labu parang 969 cP, kabocha 1177 cP dan *butternut* 1376 cP, *breakdown* tepung labu parang -4 cP, kabocha -5 cP dan *butternut* 550,5 cP, viskositas akhir tepung labu parang 1579,5 cP, kabocha 2491,5 cP dan *butternut* 3537 cP, *setback* tepung labu parang 610,5 cP, kabocha 1314,5 cP, dan *butternut* 2161,5, waktu puncak tepung labu parang 13 menit, kabocha 13 menit dan *butternut* 4,1 menit sedangkan suhu gelatinisasi hanya terbaca di tepung labu *butternut* yaitu 55,17°C.

**Kata Kunci :** Tepung labu kuning,  $\beta$ -karoten, Drum drying, fisikokimia