DAFTAR PUSTAKA

[AOAC] Association of Official Analytical Chemistry. 1995. Official Method of Analysis. Washington, D.C.

[AOAC] Association of Official Analytical Chemistry. 2005. Official Method of Analysis. Washington, D.C.

Aini, N., Wijonarko, G. dan Sustriawan, B. 2016. Sifat fisik kimia dan fungsional tepung jagung yang diproses melalui fermentasi. *J. Agritech* 36 (2): 160-169

Aisyah, L.N. 2012. Kandungan betakaroten, protein, kalsium, dan uji kesukaan crackers dengan substitusi tepung ubi jalar kuning (*Ipomoea Batatas* L.) dan ikan teri nasi (*Stolephorus* sp.) untuk anak kkep dan kva". Artikel Ilmiah Fakultas Kedokteran Universitas Diponegoro Semarang.

Almatsier, S. 2001. Prinsip dasar ilmu gizi. Jakarta: PT Gramedia Pustaka Utama.

Alwijaya. 2016. Pembuatan beras hybrid berbasis singkong (*Manihot esculentra*) dan labu kuning (*Cucurbita moschata*) sebagai makanan pokok alternatif. [Skripsi]. Fakultas Sains dan Teknologi, UIN Alauddin Makassar.

Andarwulan, N., Kusnandar, F., dan Herawati, D. 2011. Analisis Pangan. Jakarta: PT. Dian Rakyat

Andrejiova, A.A., Hegedusova, and Mezeyova. 2016. Effect of genotype and selenium biofortification on content of important bioactive substances in tomato (*Lycopersicon esculentum* Mill.) fruits. *Jurnal of International Scientific Publications* 4 : 8 – 18.

Anita, S. 2009. Studi sifat fisiko-kimia, sifat fungsional karbohidrat, dan aktivitas antioksidan tepung kecambah Kacang Komak (*Lablab purpureus* L.) Sweet. [Skripsi]. Bogor: Fakultas Teknologi Pertanian. Institut Pertanian Bogor.

Apriliyanti, T. 2010. Kajian sifat fisikokimia dan sensori tepung ubi jalar ungu (*Ipomea batatas* blackie) dengan variasi proses pengeringan. [Skripsi]. Fakultas Pertanian, Universitas Sebelas Maret, Surakarta.

Asgar, A., dan Musaddad D. 2008. Pengaruh media, suhu, dan lama *blanching* sebelum pengeringan terhadap mutu lobak kering. *J. Hort.* 18(1): 87-94

Axtell, B. 2011. Tray dryers. *Practical action technology challenging poverty*. England (UK): Practical Action.

Azizah, B., dan Nina, S. 2014. Standarisasi parameter non spesifik dan perbandingan kadar kurkumin ekstrak etanol dan ekstrak terpurifikasi rimpang kunyit. [Skripsi]. Fakultas Farmasi, Universitas Ahmad Dahlan. Yogyakarta.

Cerniauskiene, J., Kulaitiene, J., Danilcenko, H., Jariene, E., and Juknevičiene, E. 2014. Pumpkin Fruit Flour as a Source for Food Enrichment in Dietary Fiber Pumpkin Fruit Flour as a Source for Food Enrichment in Dietary Fiber. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, *42*: 19–23.

Efendi, Z., Surawan, F.E.D., dan Winarto. 2015. Efek *blanching* dan metode pengeringan terhadap sifat fisikokimia tepung ubi jalar orange (*Ipomoea batatas L.*). *Jurnal Agroindustri* 5(2): 109-117.

Erawati, C.M. 2006. Kendali Stabilitas Beta Karoten selama Proses Produksi Tepung Ubi Jalar (Ipomoea bata-tas L.). [Tesis]. Sekolah Pascasarjana IPB. Bogor.

Estiasih, T. dan Ahmadi, K.G.S. 2009. Teknologi Pengolahan Pangan. PT. Bumi Aksara. Jakarta.

Faridah dan Thomas, M.C. 2016. Analisis β-karoten dalam waluh (*Cucurbita sp.*) secara spektrofotometri cahaya tampak. Di dalam: Prosiding Seminar Nasional Tumbuhan Obat Indonesia ke-50, Samarinda; 20 – 21 April 2016. hlm 194-203.

Faridah, D.N., Fardiaz, D., Andarwulan, N., dan Sunarti, T.C. 2014. Karakteristik sifat fisikokimia pati garut (*Maranta arundinaceae*). *Journal of Agritech* 34(1): 14-21.

Hamdi., Andiyono., dan Mulyati, S. 2017. Pengembangan Bahan Pangan Lokal Labu Kuning (*Cucurbita Moschata*) Di Kabupaten Sambas. UNES *Journal of Agricultural Scienties*, 1: 13-32.

Hamid, S., Muzzafar, S., Wani, I.A. dan Masoodi, F.A. 2015. Physicochemical and functional properties of two cowpea cultivars grown in temperate Indian climate. *Cogent Food and Agriculture*, 4(1): 1–11.

Hamsah. 2013. Karakterisasi sifat fisikokimia tepung buah pedada (*Sonneratia caseolaris).* [Skripsi]. Fakultas Pertanian, Universitas Hasanudin. Makassar.

Hantoro, I., Pratiwi, A.R., Maria, A.E., dan Prapti, M.S. 2012. Pendayagunaan Buah Labu Segar (*Cucurbita* sp) Menjadi Intermediate Product (Tepung Labu) Sebagai Upaya Menuju Pertumbuhan Inklusif Berkelanjutan di Wilayah Kabupaten Semarang. Laporan Program Pengabdian Masyarakat. Universitas Katolik Soegijapranata. Semarang.

Hayati, M.N. 2006. Pengaruh jenis asidulan terhadap mutu pure labu kuning (*Cucurbita pepo* L.*)* selama penyimpanan dan aplikasinya dalam pembuatan puding. [skripsi]. Fakultas Teknologi Pertanian, Institut Pertanian Bogor, Bogor.

Hazra P, Mandal AK, Dutta AK, Ram HH. 2007. Breeding Pumpkin (*Curcubita moschata* (Duch. Ex Poir.) for Fruit Yield and Other Character. *International Journal of Plant Breeding*. vol 1(1): 51–64.

Honestin, T. 2007. Karakterisasi sifat fisikokimia tepung ubi jalar. (*Ipomoea batatas*). [skripsi]. Bogor: Fakultas Teknologi Pertanian, Institut Pertanian Bogor.

Hui, YH., Clary, C., Farid, M.M., Fasina, O.O., Noomhorm, A., and Welti, C.J. 2007. Food drying science and technology: microbiology, chemistry, application. Lancaster: Destech Publication, Inc.

Hunter, R.S. 1952. Photoelectric tristimulus colorimetry with three filters. USA: U.S. Dept. Comm. Natl. Bur. Std

Hutching, J.B. 1999. Food Colour and Appearane. Marylan: Aspen publisher Inc.

Hussain, S., Anjum, F.M., But, M.S., and Sheikh, M.A. 2008. Chemical composition and functional properties of flax-seed (*Linum usitatissimum*) flour. *Sarhad J Agric*, 24(4): 649-653.

Ifgar, A. 2012. Pengaruh penambahan tepung labu kuning dan tepung terigu terhadap pembuatan biskuit. [Skripsi]. Fakultas Pertanian, Universitas Hasanudin. Makassar.

Julianti, E., Rusmarilin, H,. dan Yusraini, E. 2017. Functional and rheological properties of composite flour from sweet potato , maize , soybean and xanthan gum. *Journal of the Saudi Society of Agricultural Sciences*, 16(2): 171–177.

Kementerian Kesehatan Republik Indonesia. 2018. Data komposisi pangan Indonesia. Tersedia pada https://panganku.org.

Kiin-Kabari, D., Eke, J. dan Giami, S. 2015. Functional and Pasting Properties of Wheat or Plantain Flours Enriched with Bambara Groundnut Protein Concentrate. *International Journal of Food Science and Nutrition Engineering*, 5(2): 75–81

Koh, S., and Loh, S. 2018. In vitro bioaccessibility of ß-carotene in pumpkin and butternut squash subjected to different cooking methods. *International Food Research Journal*, 25: 188–195.

Krisno, M.A. dan Vera V.A. 2012. Ubi jalar jingga atau merah sumber beta karoten mempengaruhi fungsi mata. Malang: UMM.

Kristiani, Y. 2016. Karakteristik sifat fisikokimia tepung labu kuning (*Cucurbita moschata* D.) [Skripsi]. Fakultas Teknologi Pertanian, Institut Pertanian Bogor

Kulkarni, A.S dan Joshi, D.C. 2013. Effect of replacement of wheat flour with pumpkin powder on textural and sensory qualities of biskuit. *J. Inter. F. Research* 20(2): 587-591

Lubis, I.H. 2013. Pengaruh lama dan suhu pengeringan terhadap mutu tepung pandan. [skripsi]. Fakultas Pertanian, Universitas Sumatera Utara. Sumatera Utara.

Manirza., Medikasari., dan Nurlaili. 2011. Produksi Tepung Ubi Kayu Berprotein : Kajian Pemanfaatan Tepung Kacang Benguk sebagai Sumber Nitrogen Ragi Tempe. *Jurnal Teknologi dan Industri Hasil Pertanian* 16(1): 74-81.

Nisviaty, A. 2006. Pemanfaatan Tepung Ubi Jalar (Ipomea batatas L.) Klon BB00105.10 sebagai Bahan Dasar Produk Olahan Kukus serta Evaluasi Mutu Gizi dan Indeks Glisemiknya. Skripsi. Fateta IPB. Bogor.

Nursten, H. 2005. The Maillard Reaction: Chemistry, Biochemistry and Implication. Cambridge: The Royal society of chemistry.

Ojo, M.O., Ariahu, C.C. dan Chinma, E.C. 2017. Proximate , Functional and Pasting Properties of Cassava Starch and Mushroom (Pleurotus Pulmonarius) Flour Blends. *American Journal of Food Science and Technology*, 5(1): 11–18

Ottaway, P.B. 2002. The Stability of Vitamins During Food Processing in Henry, C. J. K. and Chapman, C. (ed), *The Nutrition Handbook for Food Processors*. UK: Berry Ottaway and Associates Ltd.

Prabasini, H., Ishartani, D., dan Rahadian D. 2013. Kajian sifat kimia dan fisik tepung labu kuning (*Cucurbita moschata)* dengan perlakuan *blanching* dan perendaman natrium metabisulfit ($Na_2S_2O_5$). *Jurnal Teknosains Pangan* 2(2): 93-102.

Pranoto, Y., Rahmayuni., Haryadi., dan Rakshit, S.K. 2014. Physicochemical properties of heat moisture treated sweet potato starches of selected Indonesian varieties. *International Food Research Journal*, 2031–2038

Purba, J.H. 2008. Pemanfaatan labu kuning sebagai bahan baku minuman kaya serat. [skripsi]. Fakultas Teknologi Pertanian, Institut Pertanian Bogor, Bogor.

Purnamasari, I.W. 2015. Pengaruh Penambahan Tepung Labu Kuning Dan Natrium Bikarbonat Terhadap Karakteristik Flake Talas. [Skripsi] Universitas Brawuijaya: Malang.

Purwanto, C.C., Ishartani, D., dan Rahadian, D. 2013. Kajian sifat fisik dan Kimia tepung labu kuning (*Cucurbita maxima*) dengan perlakuan *blanching* dan

perendaman natrium metabisulfit ($Na_2S_2O_5$). *Jurnal Teknosains Pangan* 2(2). ISSN: 2302-0733.

Que F., Mao L., Fang X., and Wu, T. 2008. Comparison of Hot air-drying and freeze-drying on the physic-chemical properties and antioxidant activities of pumpkin (*Cucurbita moschata* Duch.) flours. *Inter. J. Food Sci. Tech.* 43: 1195-1201.

Rahman, M.S., and Perera, C.O. 2005. Heat pump dehumidifier drying of food. Trends atmosphere. *International Journal of Food Properties* 1(3): 197-205.

Rahmawati, L., Susilo, B., dan Yulianingsih, R. 2014. Pengaruh variasi *blanching* dan lama perendaman asam asetat (CH_3COOH) terhadap karakteristik tepung labu kuning termodifikasi. *Jurnal Bioproses Komoditas Tropis,* 2(2) : 107-115.

Rizani L. 2015. Pengaruh waktu pasteurisasi dan suhu penyimpanan terhadap stabilitas fisikokimia *puree* dan model minuman labu kuning. [skripsi]. Fakultas Teknologi Pertanian, Institut Pertanian Bogor, Bogor

Santoso, E.B., Basito., dan Rahdian, D. 2013. Pengaruh penambahan berbagai jenis dan konsentrasi susu terhadap sifat sensoris dan sifat fisikokimia *puree* labu kuning (*Cucurbita moschata)*. *Jurnal Teknosains Pangan* 2(3): 15-26.

See, E.F., Wan, N.W.A., dan Noor A.A.A. 2007. Physico-chemical and sensory evaluation of breads supplemented with pumpkin flour. *ASEAN Food Journal* 14(2): 123-130.

Singh, H., Sodhi, N.S., dan Singh, N. 2010. Characterization of starches separated from sorghumcultivarsgrown in India. *Food Chem* 119: 95-100.

Slamet, A. 2010. Pengaruh Perlakuan Pendahuluan Pada Pembuatan Tepung Ganyong (*Canna edulis*) Terhadap Sifat Fisik Dan Amilografi Tepung Yang Dihasilkan. *Agrointek* 4(2): 100-103.

Suwanto. 2015. Potential of local food pumpkin (*Cucurbita moschata* Duch) as diversification of rice to food security. *The Proceeding of International Joint Conference*, Kediri, Indonesia; 15-16 November 2015. Hal. 633-637.

Tam, L.M., Corke, H., Tan, W.T., Li, J. dan Collado, L.S. (2004). Production of bihon-type noodle from maize starch differing in amylosa content. *Cereal Chemistry* 81(4): 475-480.

Tounkara, F., Amza, T., Lagnika C., Le G W., and Shi, Y.H. 2013. Extraction, characterization, nutritional and functional properties of roselle (*Hibiscus sabdariffa Linn*) seed proteins. *Journal of Science and Technology* 35(2): 159-166.

Trisnawati, W., Suter, K., Suastika, K., dan Putra, N.K. 2014. Pengaruh metode pengeringan terhadap kandungan antioksidan, serat pangan dan komposisi gizi tepung labu kuning. *Jurnal Aplikasi Teknologi Pangan* 3(4): 135-140.

United States Department of Agriculture (USDA). 2015. Full Report (All Nutrients): 11422, Pumpkin, raw. Retrieved on February 7, 2016 from USDA.

Usmiati, S.D., Setyaningsih., Purwani, E.Y., Yuliani, S., dan Maria O.G. 2005. Karakteristik serbuk labu kuning (*Cucurbita moschata*). *J. Tek. Dan Ind. Pang*. 16(2): 157-167

Wahyono, A., Kurniawati, E., Kasutjianingati., dan Park, K.H. 2018. Optimasi proses pembuatan tepung labu kuning menggunakan *Response Surface Methodologi* untuk meningkatkan aktivitas antioksidannya. *J. Teknol. dan Industri Pangan* 29(1): 29-38.

Warkoyo. 2007. Studi Ekstraksi Karaginan dari Rumput Laut Euchema cottoni. [Skripsi]. Universitas Muhammadiyah Malang, Malang.

Winarno, F.G. 2002. Kimia Pangan dan Gizi. Jakarta: Gramedia Pustaka Utama.

Winarno, F.G. 2004. Kimia Pangan dan Gizi. Jakarta: Gramedia Pustaka Utama.

Yanlinastuti dan Fatimah, S. 2016. Pengaruh konsentrasi pelarut untuk menentukan kadar zirkonium dalam paduan U-Zr dengan menggunakan metode spektrofotometri uv-vis. Serpon, Banten. ISSN 1979-2409.

Yulianti. 2016. Perbedaan pengurangan jumlah gula terhadap karakteristik *Cake* komposit tepung labu kuning (*Cucurbita moschata*). [Skripsi]. Universitas Negeri Semarang, Semarang.

LAMPIRAN

Lampiran 1. Rumus Perhitungan Analisis Fisikokimia Tepung Labu Kuning

a Kadar air (%bb) = $\frac{W0-W1}{W0-W2}\times 100\%$

Kadar air (% bk) = $\frac{W0-W1}{W1-W2}\times 100\%$

Ket. : W_0 : berat (cawan kosong + sampel) sebelum dikeringkan (g)
W_1 : berat (cawan kosong + sampel) sesudah dikeringkan (g)
W_2 : berat cawan (g)

b Kadar abu (% bb) = $\frac{C-A}{B-A}\times 100\%$

(% bk) = $\frac{\text{Kadar abu (bb)}}{\text{100–kadar air (bb)}}$ x 100%

Ket. : A : berat cawan kosong (g)
B : berat cawan + sampel awal (g)
C : berat cawan + sampel setelah diabukan (g)

a Kadar protein (%bb) = %N x faktor koreksi

(%bk) = $\frac{\text{Kadar protein (bb)}}{\text{100 – kadar air (bb)}}$ x 100%

Ket. : %N : kadar nitrogen yaitu $\frac{Vs-Vb\times N\times 14{,}007}{W}\times 100\%$

Vs : volume HCl yang dihabiskan untuk menitrasi sampel (ml)

Vb : volume HCl yang dihabiskan untuk menitrasi blanko (ml)
N : normalitas HCL (N)
W : berat sampel (mg)

b Kadar lemak (%bb) = $\frac{W1-W2}{W0}\times 100\%$

(%bk) = $\frac{\text{Kadar protein (bb)}}{\text{100 – kadar air (bb)}}$ x 100%

Ket. : W_0 : berat sampel (g)
W_1 : berat labu lemak + lemak hasil ekstraksi (g)
W_2 : berat labu lemak kosong (g)

c Kadar Karbohidrat (%bb) = 100 - (Kadar air + kadar abu + kadar protein + kadar lemak)

$$(\%bk) = \frac{\text{Kadar karbohidrat (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

d Serat kasar $(\%bb) = \frac{C - B}{A} \times 100\%$

Ket : C = bobot kertas saring + residu
B = bobot kertas saring
A = bobot sampel

$$(\%bk) = \frac{\text{Kadar serat kasar(bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

g. Betakaroten $(\%bb) = \frac{\text{Konsentrasi (mg/ml) x Vol.sampel (ml) x Fp}}{\text{Bobot sampel (g)}}$

h Energi (bb) = ((4 x kadar karbohidrat) + (9 x kadar lemak) + (4 x kadar protein))

$$(bk) = \frac{\text{Energi (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

i Rendemen daging buah per buah utuh $(\%bb) = \frac{\text{berat daging buah (g)}}{\text{berat utuh labu kuning (g)}} \times 100\%$

Rendemen tepung per daging buah $(\%bb) = \frac{\text{berat tepung labu (g)}}{\text{berat daging buah (g)}} \times 100\%$

$$(\%bk) = \frac{\text{rendemen tepung (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

Rendemen tepung per buah utuh $(\%bb) = \frac{\text{berat tepung labu (g)}}{\text{berat utuh labu (g)}} \times 100\%$

$$(\%bk) = \frac{\text{rendemen tepung (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

j Daya ikat air (mL/g) $(bb) = \frac{V1 - V2}{W}$

Ket : V1 = volume air destilat yang diberikan (mL)
V2 = volume supernatan setelah disaring (mL)
W = berat sampel (g)

$$(bk) = \frac{\text{daya ikat air (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

k Densitas kamba (g/mL)

$$(bb) = \frac{\text{berat tepung labu (g)}}{\text{volume tepung labu (mL)}}$$

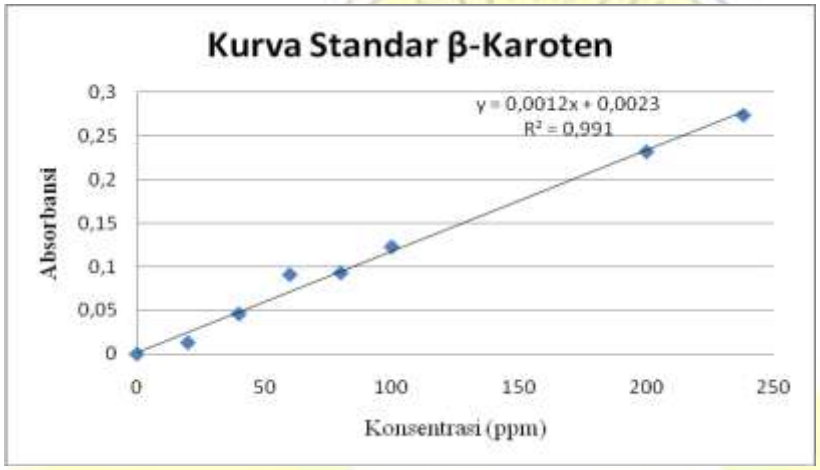
$$(bk) = \frac{\text{Densitas kamba (bb)}}{100 - \text{kadar air (bb)}} \times 100\%$$

Lampiran 2. Kurva Standar β-karoten

Kurva Baku Standart β-Karoten

Data Pembuatan Kurva Standart

No	Konsentrasi (ppm)	Absorbansi
1	0	0
2	20	0,013
3	40	0,046
4	60	0,091
5	80	0,093
6	100	0,123
7	200	0,232
8	238	0,274



Lampiran 3. Hasil Perhitungan β-karoten

Perhitungan kadar β-karoten

a. **Kadar β-karoten penelitian pendahuluan**

Data bobot sampel dan absorbansi

No	Sampel	Bobot sampel (gram)	Absorbansi
1	Kontrol Labu 1	3,0016	0,262
2	Kontrol Labu 2	3,0007	0,274
3	Blanching Labu 1	3,0016	0,232
4	Blanching Labu 2	3,0004	0,245
5	$Na_2S_2O_5$ Labu 1	3,0028	0,366
6	$Na_2S_2O_5$ Labu 2	3,0003	0,351

Penentuan Konsentrasi (ppm)

Kontrol ulangan 1 $X = \frac{Y - a}{b}$ $= \frac{0,262 - 0,0023}{0,0012} = 216,4167$ ppm $= 216,4167$ mg/L $= 216,4167$ mg/1000ml $= 216,4167 \times 10^{-3}$ mg/ml	Kontrol ulangan 2 $X = \frac{Y - a}{b}$ $= \frac{0,274 - 0,0023}{0,0012} = 226,4167$ ppm $= 226,4167$ mg/L $= 226,4167$ mg/1000ml $= 226,4167 \times 10^{-3}$ mg/ml
Blanching ulangan 1 $X = \frac{Y - a}{b}$ $= \frac{0,232 - 0,0023}{0,0012} = 191,4167$ ppm $= 191,4167$ mg/L $= 191,4167$ mg/1000ml $= 191,4167 \times 10^{-3}$ mg/ml	*Blanching* ulangan 2 $X = \frac{Y - a}{b}$ $= \frac{0,245 - 0,0023}{0,0012} = 202,25$ ppm $= 202,25$ mg/L $= 202,25$ mg/1000ml $= 202,25 \times 10^{-3}$ mg/ml
$Na_2S_2O_5$ ulangan 1 $X = \frac{Y - a}{b}$ $= \frac{0,366 - 0,0023}{0,0012} = 303,083$ ppm $= 303,083$ mg/L $= 303,083$ mg/1000ml $= 303,083 \times 10^{-3}$ mg/ml	$Na_2S_2O_5$ ulangan 2 $X = \frac{Y - a}{b}$ $= \frac{0,351 - 0,0023}{0,0012} = 290,583$ ppm $= 290,583$ mg/L $= 290,583$ mg/1000ml $= 290,583 \times 10^{-3}$ mg/ml

Penentuan kadar β-karoten (µg/g)

Kontrol ulangan 1 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{216{,}4167 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0016 \text{ g}}$ = 0,721 mg/g = 721 µg/g	Kontrol ulangan 2 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{226{,}4167 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0007 \text{ g}}$ = 0,7544 mg/g = 754,5 µg/g
Blanching ulangan 1 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{191{,}4167 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0016 \text{ g}}$ = 0,6377 mg/g = 637,7 µg/g	*Blanching* ulangan 2 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{202{,}25 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0004 \text{ g}}$ = 0,6741 mg/g = 674,1 µg/g
$Na_2S_2O_5$ ulangan 1 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{303{,}083 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0028 \text{ g}}$ = 1,0093 mg/g = 1009,3 µg/g	$Na_2S_2O_5$ ulangan 2 $\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$ $= \frac{290{,}583 \times 10^{-3} \text{ mg/ml} \times 2 \text{ ml} \times 10/2}{3{,}0003 \text{ g}}$ = 0,9685 mg/g = 968,7 µg/g

b. **Kadar β-karoten Penelitian Utama**

Data bobot sampel dan absorbansi

No	Sampel	Bobot sampel (gram)	Absorbansi
1	Tepung Labu Parang 1	3,0022	0,814
2	Tepung Labu Parang 2	3,0030	0,820
3	Tepung Kabocha 1	3,0036	0,775
4	Tepung Kabocha 2	3,0012	0,783
5	Tepung Butternut 1	3,0015	0,320
6	Tepung Butternut 2	3,0055	0,312

Penentuan Konsentrasi (ppm)

Tepung Labu Parang 1	Tepung Labu Parang 2
$X = \frac{Y - a}{b}$ $= \frac{0,814 - 0,0023}{0,0012} = 676,4167$ ppm $= 676,4167$ mg/L $= 676,4167$ mg/1000ml $= 676,4167 \times 10^{-3}$ mg/ml	$X = \frac{Y - a}{b}$ $= \frac{0,820 - 0,0023}{0,0012} = 681,4167$ ppm $= 681,4167$ mg/L $= 681,4167$ mg/1000ml $= 681,4167 \times 10^{-3}$ mg/ml
Tepung Kabocha 1	Tepung Kabocha 2
$X = \frac{Y - a}{b}$ $= \frac{0,775 - 0,0023}{0,0012} = 643,9167$ ppm $= 643,9167$ mg/L $= 643,9167$ mg/1000ml $= 643,9167 \times 10^{-3}$ mg/ml	$X = \frac{Y - a}{b}$ $= \frac{0,783 - 0,0023}{0,0012} = 650,583$ ppm $= 650,583$ mg/L $= 650,583$ mg/1000ml $= 650,583 \times 10^{-3}$ mg/ml
Tepung Butternut 1	Tepung Butternut 2
$X = \frac{Y - a}{b}$ $= \frac{0,320 - 0,0023}{0,0012} = 264,75$ ppm $= 264,75$ mg/L $= 264,75$ mg/1000ml $= 264,75 \times 10^{-3}$ mg/ml	$X = \frac{Y - a}{b}$ $= \frac{0,312 - 0,0023}{0,0012} = 258,083$ ppm $= 258,083$ mg/L $= 258,083$ mg/1000ml $= 258,083 \times 10^{-3}$ mg/ml

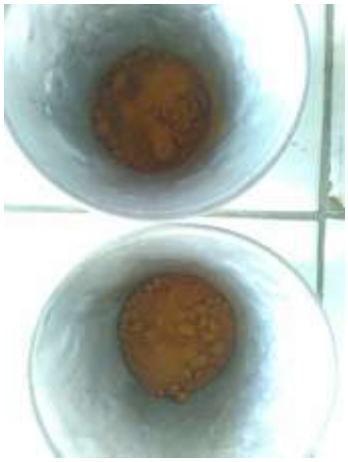
Penentuan kadar β-karoten (µg/g)

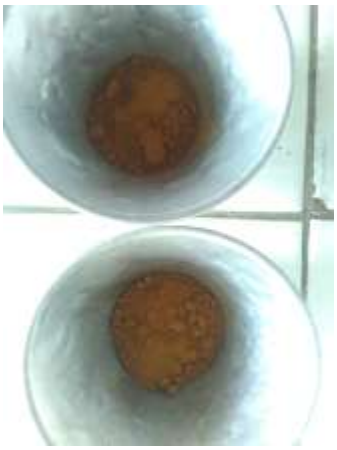
Tepung Labu Parang 1	Tepung Labu Parang 2
$\frac{\text{Konsentrasi (mg/ml)} \times \text{Vol.sampel} \times Fp}{\text{Bobot sampel}}$ $= \frac{676,4167 \times 10^{-3} \text{ mg/ml} \times 1 \text{ ml} \times 10/1}{3,0022 \text{ g}}$ $= 2,2531$ mg/g $= 2253,1$ µg/g	$\frac{\text{Konsentrasi (mg/ml)} \times \text{Vol.sampel} \times Fp}{\text{Bobot sampel}}$ $= \frac{681,4167 \times 10^{-3} \text{ mg/ml} \times 1 \text{ ml} \times 10/1}{3,0030 \text{ g}}$ $= 2,26912$ mg/g $= 2269,12$ µg/g
Tepung Kabocha 1	Tepung kabocha 2
$\frac{\text{Konsentrasi (mg/ml)} \times \text{Vol.sampel} \times Fp}{\text{Bobot sampel}}$ $= \frac{643,9167 \times 10^{-3} \text{ mg/ml} \times 1 \text{ ml} \times 10/1}{3,0036 \text{ g}}$ $= 2,1438$ mg/g $= 2143,8$ µg/g	$\frac{\text{Konsentrasi (mg/ml)} \times \text{Vol.sampel} \times Fp}{\text{Bobot sampel}}$ $= \frac{650,583 \times 10^{-3} \text{ mg/ml} \times 1 \text{ ml} \times 10/1}{3,0012 \text{ g}}$ $= 2,1677$ mg/g $= 2167,7$ µg/g

Tepung Butternut 1	Tepung Butternut 2
$\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$	$\frac{\text{Konsentrasi (mg/ml) x Vol.sampel x Fp}}{\text{Bobot sampel}}$
$= \frac{264{,}75 \times 10^{-3}\ \text{mg/ml} \times 1\ \text{ml} \times 10/1}{3{,}0015\ \text{g}}$ = 0,88206 mg/g = 882,06 µg/g	$= \frac{258{,}083 \times 10^{-3}\ \text{mg/ml} \times 1\ \text{ml} \times 10/1}{3{,}0055\ \text{g}}$ = 0,85870 mg/g = 858,70 µg/g

Lampiran 4. Gambar Analisis Penelitian Pendahuluan

Kadar air

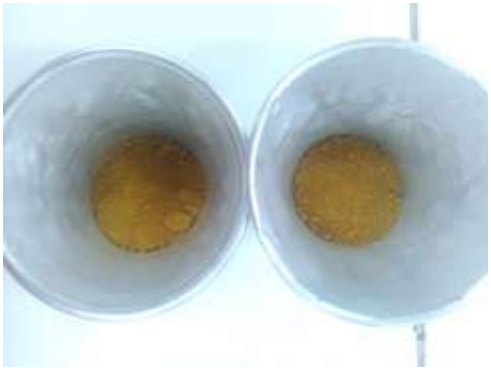




β-Karoten

Lampiran 5. Gambar Analisis Penelitian Utama

Kadar air



Kadar abu

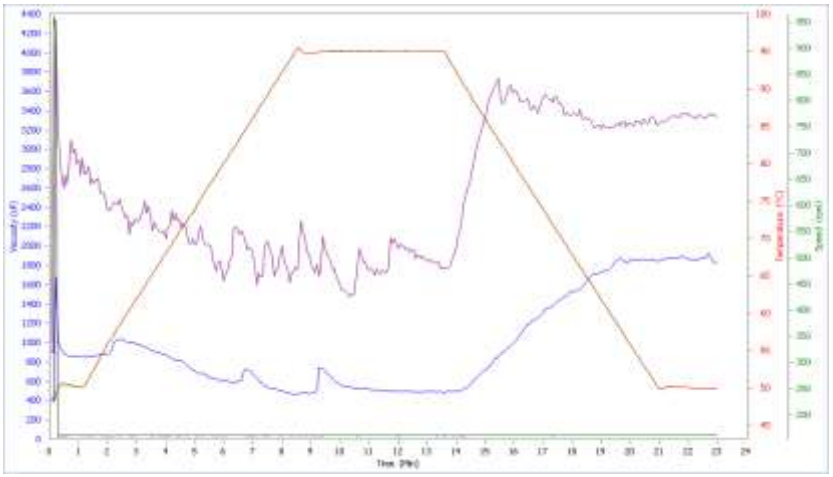
Betakaroten

Daya ikat air (sebelum di sentrifius)

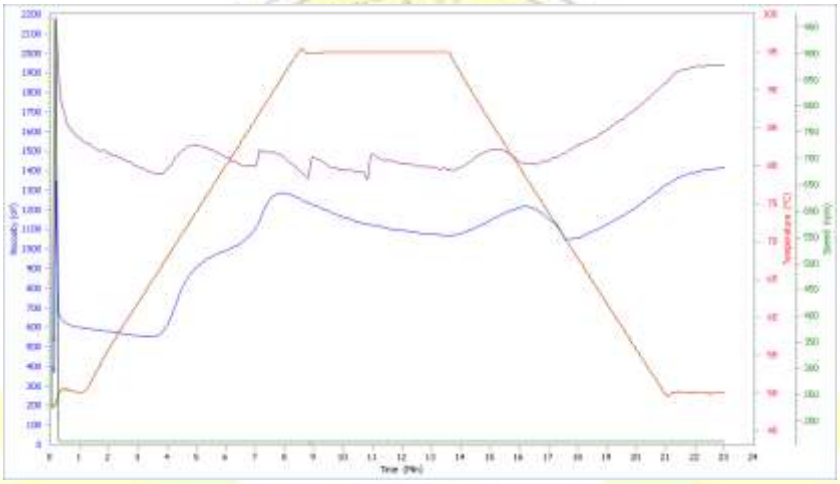
Lemak

Protein

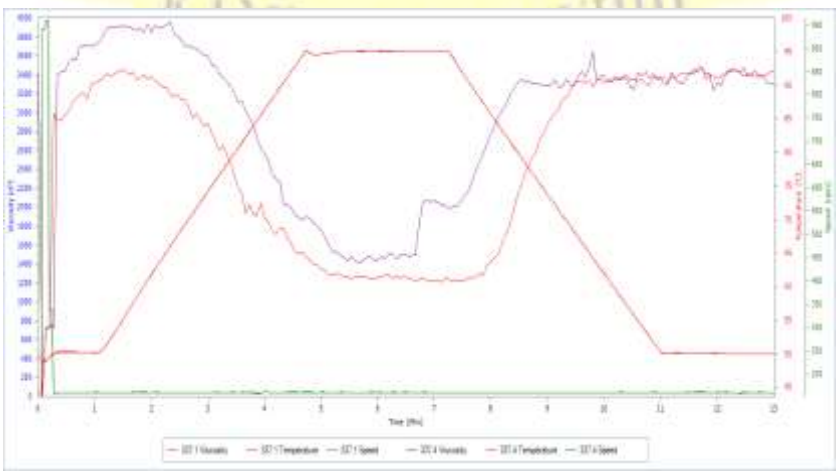
Lampiran 6. Grafik Analisis Profil Gelatinisasi Pati



Tepung labu parang



Tepung labu kabocha



Tepung butternut

Lampiran 7. Hasil SPSS Penelitian Pendahuluan

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Betakaroten	Between Groups	,122	2	,061	108,029	,002
	Within Groups	,002	3	,001		
	Total	,124	5			
Kadar_air	Between Groups	2,800	2	1,400	24,620	,014
	Within Groups	,171	3	,057		
	Total	2,970	5			
Warna_L	Between Groups	29,524	2	14,762	5,245	,105
	Within Groups	8,443	3	2,814		
	Total	37,966	5			
Warna_a	Between Groups	4,168	2	2,084	,858	,507
	Within Groups	7,287	3	2,429		
	Total	11,455	5			
Warna_b	Between Groups	29,236	2	14,618	1,311	,390
	Within Groups	33,447	3	11,149		
	Total	62,683	5			
Warna_c	Between Groups	29,798	2	14,899	1,306	,391
	Within Groups	34,216	3	11,405		
	Total	64,015	5			
Warna_h	Between Groups	7,031	2	3,516	,936	,483
	Within Groups	11,262	3	3,754		
	Total	18,294	5			

Kadar_air

Duncan[a]

		Subset for alpha = 0.05	
PraPerlakuan	N	1	2
Natrium	2	8,4786	
Control	2		9,9034
Blanching	2		9,9509
Sig.		1,000	,855

Warna_L

Duncan[a]

PraPerlakuan	N	Subset for alpha = 0.05	
		1	2
Blanching	2	79,9717	
Control	2	82,7333	82,7333
Natrium	2		85,4050
Sig.		,198	,209

Betakaroten

Duncan[a]

PraPerlakuan	N	Subset for alpha = 0.05		
		1	2	3
Blanching	2	,6550		
Control	2		,7350	
Natrium	2			,9900
Sig.		1,000	1,000	1,000

Lampiran 8. Hasil SPSS Penelitian Utama

Descriptives

		N	Mean	Std. Deviation
Kadar_air	Parang	2	16,5200	,28284
	Kabocha	2	12,3900	,43841
	Butternut	2	15,3150	,47376
	Total	6	14,7417	1,92560
Kadar_abu	Parang	2	9,3950	,36062
	Kabocha	2	11,2900	,26870
	Butternut	2	10,2400	,43841
	Total	6	10,3083	,89437
Protein	Parang	2	13,4700	,50912
	Kabocha	2	16,5700	,08485
	Butternut	2	8,4400	,33941
	Total	6	12,8267	3,68022
Lemak	Parang	2	5,2550	,23335
	Kabocha	2	1,7700	,09899
	Butternut	2	1,7900	,38184
	Total	6	2,9383	1,80617
Karbohidrat	Parang	2	71,9000	,05657
	Kabocha	2	70,3650	,09192
	Butternut	2	79,5300	,48083
	Total	6	73,9317	4,39598
Energi	Parang	2	388,7800	,15556
	Kabocha	2	363,6900	1,58392
	Butternut	2	367,9750	,17678
	Total	6	373,4817	12,02533
Serat	Parang	2	21,5550	,31820
	Kabocha	2	18,9300	,50912
	Butternut	2	14,0250	,37477
	Total	6	18,1700	3,43321
BetaKaroten	Parang	2	2,6350	,00707
	Kabocha	2	2,4250	,03536
	Butternut	2	1,0000	,01414
	Total	6	2,0200	,79584
Rendemen_DagingBuah_Buah Utuh	Parang	2	100,9700	1,13137
	Kabocha	2	81,3350	2,28395
	Butternut	2	96,6250	2,21324

	Total	6	92,9767	9,34729
Rendemen_Tepung_DagingBuah	Parang	2	9,6400	,89095
	Kabocha	2	13,9950	,28991
	Butternut	2	9,9750	,85560
	Total	6	11,2033	2,24064
Rendemen_Tepung_BuahUtuh	Parang	2	8,3800	,86267
	Kabocha	2	10,1150	,12021
	Butternut	2	8,3650	,94045
	Total	6	8,9533	1,06693
Daya Serap Air	Parang	2	9,4150	,19092
	Kabocha	2	7,1300	,36770
	Butternut	2	9,3100	,33941
	Total	6	8,6183	1,17841
Densitas_Kamba	Parang	2	,5500	,01414
	Kabocha	2	,5650	,00707
	Butternut	2	,6450	,00707
	Total	6	,5867	,04633
Peak_visc	Parang	2	1725,5000	1058,53885
	Kabocha	2	1411,5000	174,65537
	Butternut	2	3707,5000	362,74578
	Total	6	2281,5000	1223,24303
Trough_visc	Parang	2	1128,0000	903,68247
	Kabocha	2	1226,5000	248,19448
	Butternut	2	1329,0000	171,11984
	Total	6	1227,8333	435,41494
Breakdown	Parang	2	597,5000	154,85639
	Kabocha	2	185,0000	73,53911
	Butternut	2	2378,5000	191,62594
	Total	6	1053,6667	1048,98192
Final_visc	Parang	2	2582,5000	1074,09520
	Kabocha	2	1678,5000	371,23106
	Butternut	2	3365,5000	86,97413
	Total	6	2542,1667	911,03313
Setback	Parang	2	1454,5000	170,41273
	Kabocha	2	452,0000	123,03658
	Butternut	2	2036,5000	258,09398
	Total	6	1314,3333	732,17093
Peak_time	Parang	2	3,1700	,14142
	Kabocha	2	6,3650	2,02940

	Butternut	2	1,9000	,56569
	Total	6	3,8117	2,26406
Temp_past	Parang	2	50,2250	,17678
	Kabocha	2	67,6250	,03536
	Butternut	2	50,1750	,03536
	Total	6	56,0083	8,99863

Kadar_air

Duncan[a]

		Subset for alpha = 0.05	
Varietas	N	1	2
Kabocha	2	12,3900	
Butternut	2		15,3150
Parang	2		16,5200
Sig.		1,000	,059

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Kadar_abu

Duncan[a]

		Subset for alpha = 0.05	
Varietas	N	1	2
Parang	2	9,3950	
Butternut	2	10,2400	10,2400
Kabocha	2		11,2900
Sig.		,102	,063

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Protein

Duncan[a]

		Subset for alpha = 0.05		
Varietas	N	1	2	3
Butternut	2	8,4400		
Parang	2		13,4700	
Kabocha	2			16,5700
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Lemak

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	1,7700	
Butternut	2	1,7900	
Parang	2		5,2550
Sig.		,945	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Karbohidrat

Duncan[a]

Varietas	N	Subset for alpha = 0.05		
		1	2	3
Kabocha	2	70,3650		
Parang	2		71,9000	
Butternut	2			79,5300
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Energi

Duncan[a]

Varietas	N	Subset for alpha = 0.05		
		1	2	3
Kabocha	2	363,6900		
Butternut	2		367,9750	
Parang	2			388,7800
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Serat

Duncan[a]

Varietas	N	Subset for alpha = 0.05		
		1	2	3
Butternut	2	14,0250		
Kabocha	2		18,9300	
Parang	2			21,5550
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

BetaKaroten

Duncan[a]

Varietas	N	Subset for alpha = 0.05		
		1	2	3
Butternut	2	1,0000		
Kabocha	2		2,4250	
Parang	2			2,6350
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Rendemen Daging Buah / Buah Utuh

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	81,3350	
Butternut	2		96,6250
Parang	2		100,9700
Sig.		1,000	,112

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Rendemen Tepung / Daging Buah

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Parang	2	9,6400	
Butternut	2	9,9750	
Kabocha	2		13,9950
Sig.		,679	1,000

Rendemen Tepung / Buah Utuh

Duncan[a]

Varietas	N	Subset for alpha = 0.05
		1
Butternut	2	8,3650
Parang	2	8,3800
Kabocha	2	10,1150
Sig.		,099

Daya Serap Air

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	7,1300	
Butternut	2		9,3100
Parang	2		9,4150
Sig.		1,000	,757

Densitas_Kamba

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Parang	2	,5500	
Kabocha	2	,5650	
Butternut	2		,6450
Sig.		,231	1,000

Warna_L

Duncan[a]

Tiga_Varietas	N	Subset for alpha = 0.05		
		1	2	3
Parang	2	72,4100		
Butternut	2		80,2500	
Kabocha	2			85,5650
Sig.		1,000	1,000	1,000

Warna_a

Duncan[a]

Tiga_Varietas	N	Subset for alpha = 0.05		
		1	2	3
Kabocha	2	10,3700		
Butternut	2		16,0000	
Parang	2			21,7900
Sig.		1,000	1,000	1,000

Warna_b

Duncan[a]

Tiga_Varietas	N	Subset for alpha = 0.05	
		1	2
Parang	2	47,2950	
Butternut	2	48,7800	
Kabocha	2		58,5900
Sig.		,383	1,000

Warna_c

Duncan[a]

Tiga_Varietas	N	Subset for alpha = 0.05	
		1	2
Butternut	2	51,3500	
Parang	2	52,0750	
Kabocha	2		59,5000
Sig.		,626	1,000

Warna_h

Duncan[a]

Tiga_Varietas	N	Subset for alpha = 0.05		
		1	2	3
Parang	2	65,2050		
Butternut	2		71,8300	
Kabocha	2			79,9600
Sig.		1,000	1,000	1,000

Peak

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	1411,5000	
Parang	2	1725,5000	1725,5000
Butternut	2		3707,5000
Sig.		,664	,056

Trough

Duncan[a]

Varietas	N	Subset for alpha = 0.05
		1
Parang	2	1128,0000
Kabocha	2	1226,5000
Butternut	2	1329,0000
Sig.		,737

Breakdown

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	185,0000	
Parang	2	597,5000	
Butternut	2		2378,5000
Sig.		,069	1,000

Final_visc

Duncan[a]

Varietas	N	Subset for alpha = 0.05
		1
Kabocha	2	1678,5000
Parang	2	2582,5000
Butternut	2	3365,5000
Sig.		,083

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Setback

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Kabocha	2	452,0000	
Parang	2		1454,5000
Butternut	2		2036,5000
Sig.		1,000	,056

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Peak_time

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Butternut	2	1,9000	
Parang	2	3,1700	3,1700
Kabocha	2		6,3650
Sig.		,374	,079

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Temp_past

Duncan[a]

Varietas	N	Subset for alpha = 0.05	
		1	2
Butternut	2	50,1750	
Parang	2	50,2250	
Kabocha	2		67,6250
Sig.		,670	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.