

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **5.1 Kesimpulan**

Berdasarkan hasil penelitian yang telah dilakukan, formulasi sediaan sabun transparan dengan kombinasi *Sodium Lauryl Ether Sulfate (SLES)* dan *cocamidopropyl betaine* berpengaruh secara signifikan terhadap efektivitas sediaan sabun transparan. *Sodium Lauryl Ether Sulfate (SLES)* dapat meningkatkan daya pembersihan, pembentukan busa dan stabilitas busa. *Cocamidopropyl betaine* meningkatkan daya pembersihan, pembentukan busa dan stabilitas busa. Interaksi kedua faktor yaitu *Sodium Lauryl Ether Sulfate (SLES)* dan *cocamidopropyl betaine* tidak memberikan berpengaruh signifikan pada respon pembentukan busa namun memberikan pengaruh signifikan terhadap respon daya pembersihan dan stabilitas busa.

Formula optimum didapatkan dari hasil optimasi sediaan sabun transparan yaitu pada konsentrasi *Sodium Lauryl Ether Sulfate (SLES)* yang terpilih yaitu 11,68% dan konsentrasi *cocamidopropyl betaine* yang terpilih yaitu 8,72% dengan prediksi efektivitas dari sediaan sabun transparan yang meliputi daya pembersihan sebesar 45,21%, pembentukan busa sebesar 11,39 cm dan stabilitas busa sebesar 67,21% yang telah memenuhi persyaratan dan spesifikasi.

#### **5.2 Saran**

Berdasarkan hasil penelitian yang didapatkan, disarankan dilakukan pembuktian formula optimum sediaan sabun transparan terpilih dan hasilnya kemudian dibandingkan dengan hasil uji efektivitas sabun transparan secara teoritis.

## DAFTAR PUSTAKA

- Ahmad, N., Kian, Y.S. and Hassan, H.A. 2008, DHSA-Transparency Improver In Clear Bar Soap, *MPOB Information Series*, **393**: 1-4.
- Anonim. 2016, *Sodium Lauryl Ether Sulfate*. Diakses pada 10 Agustus 2016, <http://www.sinergiarecursglobal.com/sodium-lauryl-ether-sulfate-sles/>.
- Anggraini, T., Ismanto S.D. and Dahlia. 2015, The Making of Transparent Soap From Green Tea Extract, *International Journal on Advanced Science Engineering Information Technology*, **5(4)**: 349-356.
- Armstrong, N.A. and James, K.C. 1996, *Pharmaceutical Experimental Design and Interpretation : Factorial Design of Experiments*. Taylor and Francix, USA, pp 131-165.
- Awang, R., Ahmad, S. and Ghazali, R. 2001, Properties of Sodium Soap Derived From Palm-Based Dihydroxystearic Acid, *Journal of Oil Palm Research*, **13(2)**: 33-38.
- Ayoade, G.W., Amoo, I.A. and Akpambang. 2015, Physicochemical and Fatty Acid Composition of Crude and Refined Oils of African Canarium, *International Journal of Science and Technology*, **4(5)**: 230-234.
- Bensouilah, J. and Buck, P. 2006, *Aromadermatology and Aromatherapy in the Treatment and Care of Common Skin Conditions*. Radcliffe Publishing Ltd., Abingdon, UK.
- Betsy, K.J., Jilu, M., Fathima, R. and Varkey, J.T. 2013, Determination of Alkali Content & Total Fatty Matter in Cleansing Agents, *Asian journal of Science and Applied Technology*, **2(1)**: 8-12.
- Bernecke, S. and Maruska, A. 2013, Analysis of Free Fatty Acid in Soap Samples by Means of Gas Chromatography-Mass Spectrometry, *CHEMIJA*, **24(4)**: 307-311.
- Bolton, S. and Bon, C. 2004, *Pharmaceutical Statistic Pratical and Clinical Application* Four Edition, New York: Marcel Dekker Inc.
- Budianto, V. 2010, ‘Optimasi Sabun Transparan Dengan Humectant Gliserin Dan Surfaktan Cocomidopropyl Betaine: Aplikasi Desain Faktorial’, Skripsi, Sarjana Farmasi, Universitas Sanata Dharma, Yogyakarta.

- Bunta, S.M. 2013, ‘Pengaruh Penambahan Variasi Konsentrasi Asam Sitrat Terhadap Kualitas Sintesis Sabun Transparan’, *Skripsi*, Sarjana Pendidikan Kimia, Universitas Negeri Gorontalo, Gorontalo.
- Burnett, C.L., Bergfeld, W.F., Belsito, D.V., Hill, R.A., Klaassen, C.D., Liebler, D., Jr Marks, J.G., Shank, R.C., Slaga, T.J., Snyder, P.W. and Andersen, F.A. 2012, Final Report of The Cosmetic Ingredient Review Expert Panel on the Safety Assessment of Cocamidopropyl Betaine (CAPB), *International Journal of Toxicology*, **31(Supplement 1)**: 775-1115.
- Cavitch, S.M. 2001, *Choosing Your Oils, Properties of Fatty Acids*, diakses pada 15 Mei 2017, <http://user.silverlink.net/~timer/soapdesign>.
- Corazza, M., Lauriola, M.M., Zapatera, M. and Virgili, A. 2009, Surfactants, Skin Cleansing Protagonist, *Journal Compilation European Academy of Dermatology and Venereology*, **24**: 1-4.
- Cosmetic Ingredient Review. 2008, *Amended Safety Assessment of Cocos nucifera (coconut) oil*, Cosmetic Ingredients Review Expert Panel, Washington DC, USA.
- Cosmetic Ingredient Review. 2010, *Cocamidopropyl Betaine and Related Amidopropyl Betains as Used in Cosmetics*, Cosmetic Ingredients Review Expert Panel, Washington DC, USA.
- Cosmetic Ingredient Review. 2013, *Safety Assessment of Alkyl Betaines as Used in Cosmetics*, Cosmetic Ingredients Review Expert Panel, Washington DC, USA.
- Cosmetic Ingredient Review. 2014, *Safety Assessment of Glycerin as Used in Cosmetics*, Cosmetic Ingredients Review Expert Panel, Washington DC, USA.
- Departemen Kesehatan RI. 1979, *Farmakope Indonesia*, ed. III, Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI. 1995, *Farmakope Indonesia*, ed. IV, Jakarta: Departemen Kesehatan Republik Indonesia.
- Dixit, S. 1999, Inhibiting Rancidity in Soaps and Cosmetics. Diakses 17 Oktober 2016, <http://sitaramdixit.synthasite.com/>.
- DOW. 2016, Dow Chelating Agents. Diakses 17 Oktober 2016, <http://msdssearch.dow.com/>.

- Eddy, N.O., Ukpong, J.A. and Ebenso, E.E. 2011, Lipids Characterization and Industrial Potentials of Pumpkins Seeds (*Telfairia occidentalis*) and Cashew Nuts (*Anacardium occidentale*), *e-Journal of Chemistry*, **8(4)**: 1986-1992.
- European Medicines Agency, 2015, *Background Review for Sodium Lauril Sulfate Used as an Excipient*, London: European Medicines Agency.
- Fachmi, C. 2008, ‘Pengaruh Penambahan Gliserin dan Sukrosa Terhadap Mutu SabunTransparan’, *Skripsi*, Sarjana Teknik Pertanian, Institut Pertanian Bogor, Bogor.
- Febriyenti, Sari, L.I. dan Nofita, R. 2014, Formulasi Sabun Transparan Minyak Ylang-Ylang dan Uji Efektivitasnya Terhadap Bakteri Penyebab Jerawat, *Jurnal Sains Farmasi & Klinis*, **1(1)**: 61-71.
- Fiume, M.M., Bergfeld, W.F., Belsito, D.V., Hill, R.A., Klaasen, C.D., Liebler, D., Jr, J.G.M., Shank, R.C., Siaga, T.J., Snyder, P.W. and Andersen, F.A. 2012, Safety Assessment of Propylene Glycol, Tripropylene Glycol, and PPGs as Used in Cosmetics, *International Journal of Toxicology*, **31(2)**: 2455-2605.
- Gadberry, J.F. 2006, ‘Other Types of Surfactants?’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Garna, H. 2001, Patofisiologi Infeksi Bakteri Pada Kulit, *Sari Pediatri*, **2(4)**: 205-209.
- Guertechin, L.O. 2009, ‘Surfactants: Classification’, in Barel, A.O., Paye, M. and Maibach, H.I., *Handbook of Cosmetic Science and Technology*, 3<sup>rd</sup> ed., Informa Healthcare USA Inc., New York, USA.
- Habib, A., Kumar, S., Sorowar, Md. S., Karmoker, J., Khatun, Mst.K. and Al-Reza, S.M. 2016, Study on the Physicochemical Properties of Some Commercial Soaps Available in Bangladeshi Market, *International Journal of Advanced Research in Chemical Science*, **3(6)**: 9-12.
- Hambali, E., Bunasor, T.K., Suryani, A. dan Kusumah, G.A. 2005, Aplikasi Dietanolamida Dari Asam Laurat Minyak Inti Sawit Pada Pembuatan Sabun Transparan, *J. Tek. Ind. Pert.*, **15(2)**: 46-53.

- Handayani, H.K. 2008, ‘Pengaruh Peningkatan Konsentrasi Ekstrak Etanol 96% Biji Alpukat (Persea Americana Mill) Terhadap Formulasi Sabun Padat Transparan’, *Skripsi*, Sarjana Farmasi, Universitas Islam Negeri Syarif Hidayatullah, Jakarta.
- Hasibuan, S.S. 2011, ‘Penggunaan Minyak Kelapa Murni (VCO) Sebagai Pelembab Dalam Sediaan Krim’, *Skripsi*, Sarjana Farmasi, Universitas Sumatera Utara, Medan.
- Hardian, K., Ali, A. dan Yusmarini. 2014, Evaluasi Mutu Sabun Padat Transparan Dari Minyak Goreng Bekas Dengan Penambahan SLS (*Sodium Lauryl sulfate*) Dan Sukrosa, *Jom Faperta*, **1(2)**: 1-11.
- Hepworth, P. 2006, ‘Non-ionic Surfactants’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Hernani, Bunasor, T.K. dan Fitriati. 2010, Formula Sabun Transparan Antijamur Dengan Bahan Aktif Ekstrak Lengkuas (*Alpinia galangal* L.Swartz.), *Bul.Littr.*, **21(2)**: 192-205.
- Herrwerth, S., Leidreiter, H., Wenk, H.H., Farwick, M., Ulrich-Brehm, I. and Gruning, B. 2008, Highly Concentrated Cocamidopropyl Betaine-The Latest Developments for Improved Sustainability and Enhanced Skin Care, *Tenside Surf. Det.*, **45(6)**: 304-308.
- Heryanto, A. 2013, ‘Pembuatan Sabun Transparan Bebas Alkohol (Etanol)’, *Laporan Tugas Akhir*, Diploma III Teknik Kimia, Universitas Sebelas Maret, Surakarta.
- Hibbs, J. 2006, ‘Anionic Surfactants?’’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Honari, G. and Maibach, H., 2014, ‘Skin Structure and Function’, in Honari, G. and Maibach, H., *Applied Dermatotoxicology: Clinical Aspects*. Elsevier, San Diego, USA.
- Hunting, A.L.L. 2000, ‘Soap’, in Butler, H., *Poucher’s Perfumes, Cosmetics and Soaps*, 10<sup>th</sup> ed., Kluwer Academic Publisher, London, pp 102-103.
- Jellinek, J.S. 1970, *Formulation and Function of Cosmetics*. John Wiley & Sons Inc, USA, pp 323-324.
- Jones, D.S. 2010, *Statistik Farmasi*. ECG, Jakarta.

- Kailaku, S.I. 2011, Teknologi Pengolahan Sabun Transparan Skala Rumah Tangga, *Warta Penelitian dan Pengembangan Pertanian*, **33(5)**: 14-16.
- Karsa, D.R. 2006, ‘What Are Surfactants?’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Kasor, F. 2015, ‘Pengaruh Penggunaan Virgin Coconut Oil (VCO) Sebagai Emolient Terhadap Sifat Fisik Dan Stabilitas Vitamin C Dalam Sabun Transparan’, *Skripsi*, Sarjana Farmasi Universitas Muhammadiyah Surakarta, Surakarta.
- Kartika, B. 1991, *Uji Mutu Pangan*, Proyek Peningkatan Perguruan Tinggi Universitas Gajah Mada, Yogyakarta, pp 107-111, 199.
- Kelly, T. 2009, ‘Continous Saponification and Neutralization Systems’ in Spitz, L., *Soap Manufacturing Technology*, AOCS Press, Illinois.
- Ketaren, S. 1986, *Pengantar Teknologi Minyak dan Lemak Pangan*, UI-Press, Jakarta.
- Kirk, R.S. and Sawyer, R. 1991, *Pearson’s Composition and Analysis of Foods*, 9<sup>th</sup> ed. Longman Scientific and Technical England, United Kingdom.
- Kurniawan, D. W. dan Sulaiman S. T. N. 2009, *Teknologi Sediaan Farmasi*, Graha Ilmu Yogyakarta, pp 703-704, 738-787.
- Kolarsick, P., Kolarsick, M. and Goodwin, C. 2011, Anatomy and Physiology of The Skin, *Journal of the Dermatology Nurses Association*, **3(4)**: 1-11.
- Laeha, N.A. 2015, ‘Pengaruh Penggunaan Gliserin Sebagai Humektan Terhadap Sifat Fisik Dan Stabilitas Vitamin C Dalam Sabun Padat’, *Skripsi*, Sarjana Farmasi, Universitas Muhammadiyah Surakarta, Surakarta.
- Lakshmi, C., Austoria, A.J., Srinivas, C.R., Anand, C.V. and Mathew, A.C. 2010, Irritancy Potential of 17 Detergents Used Commonly by the Indian Household, *Indian Journal Dermatol Venerol Leprol*, **76(3)**: 249-253.
- Langungi, R., Momuat, L.I. and Kumaunang, M.G. 2012, Pembuatan Sabun Mandi Padat dari VCO yang Mengandung Karotenoid, *Jurnal MIPA Unsrat Online*, **1(1)**:20-23.

- Lanigan, R.S. and Yamarik, T.A. 2002, Final Report on the Safety Assessment of EDTA, Calcium disodium EDTA, Diammonium EDTA, Dipotassium EDTA, Disodium EDTA, TEA-EDTA, Tetrasodium EDTA, Tripotassium EDTA, Trisodium EDTA, HEDTA, and Trisodium HEDTA, *International Journal of Toxicology*, **21(Supplement 2)**: 95-142.
- Lanigan, R.S. and Yamarik, T.A. 2002, Final Report on the Safety Assessment of BHT, *International Journal of Toxicology*, **21(Supplement 2)**: 19-94.
- Liebert, M.A. 1983, Final Report on the Safety Assessment of Sodium Laureth Sulfate and Ammonium Laureth Sulfate, *Journal of the American College of Toxicology*, **2(5)**: 1-34.
- Liebert, M.A. 1987, Final Report on the Safety Assessment of Oleic Acid, Lauric Acid, Palmitic Acid, Myristic Acid and Stearic Acid, *Journal of the American College of Toxicology*, **6(3)**: 321-401.
- Lubis, E.S., Lubis, L.S. dan Reveny, J. 2012, Pelembab Kulit Alami Dari Sari Buah Jeruk Bali [Citrus maxima (Burm.) Osbeck], *Journal of Pharmaceutics and Pharmacology*, **1(2)**: 104–111.
- Mabrouk, S.T. 2005, Making Usable, Quality Opaque or Transparent Soap, *Journal of Chemical Education*, **82(10)**: 1534-1537.
- Martin, A., Swarbrick, J. dan Cammarata, A. 1990, *Farmasi Fisik*, diterjemahkan oleh Yoshita, UI-Press, Jakarta.
- McGrath, J.A., Eady, R.A.J. and Pope, F.M. 2004, ‘Anatomy and Organization of Human Skin’ in *Rook’s Textbook of Dermatology*, 7<sup>th</sup> ed. John Wiley & Sons, Inc., New Jersey.
- Mitsui, T. 1997, *New Cosmetic Science*. Elsevier Science B.V, Amsterdam.
- Moaddel, T and Hill, M.I. 2009, ‘Transparent and Translucent Soap’ in Spitz, L., *Soap Manufacturing Technology*, AOCS Press, Illinois.
- Naomi, P., Gaol, A.M.L. dan Toha, M.Y. 2013, Pembuatan Sabun Lunak Dari Minyak Goreng Bekas Ditinjau Dari Kinetika Reaksi Kimia, *Jurnal Teknik Kimia*, **2(19)**: 42-48.
- Nuzantry, J.K. 2015, ‘Efektivitas Campuran Ekstrak *Aloe vera* Dan *Olive Oil* Dalam Formulasi Pelembab Pada Kekeringan Kulit’, *Laporan Hasil Karya Tulis Ilmiah*, Sarjana Kedokteran Umum, Universitas Diponegoro, Semarang.

- Osei-Bonsu, K., Shokri, N. and Grassia, P. 2015, Foam Stability in the Presence and Absence of Hydrocarbons: From Bubble-to Bulk-Scale, *Colloids and Surface A: Physicochemical and Engineering Aspects*, **481**: 514-526.
- Otterson, R. 2006, ‘Amphoteric Surfactants?’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Pambudi, D.R. 2013, ‘Formulasi Sediaan Sabun Mandi Transparan Minyak Atsiri Jeruk Purut (*Citrus histrix* DC.) Dengan Kokamidopropil Betain Sebagai Surfaktan’, *Skripsi*, Sarjana Farmasi, Universitas Muhammadiyah Surakarta, Surakarta.
- Pengawas Obat dan Makanan (POM), 2015<sup>a</sup>, *Etanol*, Jakarta: Badan Pengawas Obat dan Makanan.
- Pengawas Obat dan Makanan (POM), 2015<sup>b</sup>, *Natrium Lauril Eter Sulfat*, Jakarta: Badan Pengawas Obat dan Makanan.
- Poljsak, B., Glavan, U. and Dahmane, R., 2011, Skin Cancer, Free Radicals and Antioxidants, *International Journal of Cancer Research and Prevention*, **4(3)**: 193-217.
- Purnamawati, D. 2006, ‘Kajian Pengaruh Konsentrasi Sukrosa dan Asam Sitrat Terhadap Mutu Sabun Transparan’, *Skripsi*, Sarjana Teknologi Pertanian, Institut Pertanian Bogor, Bogor.
- Prasetya, P.R., Hikmawati, D. dan Irasanti, S.N. 2015, Hubungan Merokok dan Perubahan Hiperpigmentasi Daerah Wajah Satpam Unisba pada Tahun 2015, *Prosiding Pendidikan Dokter*, Bandung, Indonesia, pp. 829-835.
- Putri, I.A.R. dan Suhartiningsih. 2014, Pengaruh Penambahan Sari *Aloe Vera* Terhadap Sifat Fisik Dan Masa Simpan Sediaan Sabun Transparan Untuk Wajah, *e-Journal*, **3(2)**: 23-29.
- Qisti, R. 2009, ‘Sifat Kimia Sabun Transparan Dengan Penambahan Madu Pada Konsentrasi Yang Berbeda’, *Skripsi*, Sarjana Peternakan, Institut Pertanian Bogor, Bogor.
- Ranjani, I.S. and Ramamurthy, K. 2010<sup>a</sup>, Analysis of the Foam Generated Using Surfactant Sodium Lauryl Sulfate, *International Journal of Concrete Structures and Materials*, **4(1)**: 55-62.

- Ranjani, I.S. and Ramamurthy, K. 2010<sup>b</sup>, Relative Assessment of Density and Stability of Foam Produced With Four Synthetic Surfactants, *Materials and Structures*, **43**:1317-1325.
- Reis, C.M.S and Reis-Filho, E. 2016, ‘Cleansers’, in Issa, M.C.A and Tamura, B. (eds.), *daily Routine in Cosmetic Dermatology, Clinical Approaches and Procedures in Cosmetic Dermatology*, Springer International Publishing, Brazil, pp 1-3.
- Robinson, V.C., Bergfeld, W.F., Belsito, D.V., Hill, R.A., Klaasen, C.D., Jr Marks, J.G., Shank, R.C., Slaga, T.J., Synder, P.W. and Andersen, F.A. 2010, Final Report of Amended Safety Assessment of Sodium Laureth Sulfate and Related Salts of Sulfated Ethoxylated Alcohols, *International Journal of Toxicology*, **29 (Supplement 3)**: 1515-1615.
- Rowe, R.C., Sheskey, P.J. and Quinn, M.E. (eds). 2009, *Handbook of Pharmaceutical Excipients*, 6<sup>th</sup> ed., Pharmaceutical Press, London, UK.
- Rozi, M. 2013, ‘Formulasi Sediaan Sabun Mandi Transparan Minyak Atsiri Jeruk Nipis (*Citrus aurantifolia*) Dengan Cocamide DEA Sebagai Surfaktan’, *Skripsi*, Sarjana Farmasi, Universitas Muhammadiyah Surakarta, Surakarta.
- Sari, V.I. 2012, Pemanfaatan Stearin Dalam Proses Pembuatan Sabun Mandi Padat, *Agricultural Science and Technology Journal*, **11(1)**:1-10.
- Saudian Arabian Standard Organization (SASO). 2008, *Standard of Gliserin Soap, Transparent Soap and Non Transparent Soap*. SASO, Saudi Arabia.
- Setyoningrum, E.N.M. 2010, ‘Optimasi Formula Sabun Transparan dengan Fase Minyak Virgin Coconut Oil dan Surfaktan Cocoamidopropyl Betaine: Aplikasi Desain Faktorial’, *Skripsi*, Sarjana Farmasi, Universitas Sanata Dharma, Yogyakarta.
- Schmiedel, P. and Rybinski, W. 2006, ‘Applied Theory of Surfactants’, in Farn, R.J., *Chemistry and Technology of Surfactants*. Blackwell Publishing, Oxford, UK.
- Schrader, K. 1992, ‘Cleansing Action of Synthetic Detergents – Methodology of Determination’, in Braun-Falco, O. and Kortig, H.C., *Griesbach Conference Skin Cleansing With Synthetic*

- Detergents Chemical, Ecological, and Clinical Aspects.* Springer-Verlag, Berlin.
- Shrivastava, S.B. 1982, *Soap, Detergent and Perfume Industry*, Small Industry Research Institute, New Delhi, India.
- Soekarto. 1981, *Penilaian Organoleptik*, Pusat Pengembangan Teknologi Pangan, Bogor, pp 45.
- Spears, K. 2000, ‘Analytical Methods’, in Butler, H., *Poucher’s Perfumes, Cosmetics and Soaps*, 10<sup>th</sup> ed., Kluwer Academic Publisher, London, pp 535-537.
- Spitz, L. 1996, *Soap and Detergents: A Theoretical and Practical Review*, AOCS Press, Illinois.
- Srour, R.K. and McDonald, L.M. 2008, Determination of the Acidity Constants of Methyl Red and Phenol in Binary Methanol- and Ethanol-Water Mixtures, *J. Chem. Eng. Data*, **53**:116-127.
- Susanti, S., Prisiska, F. dan Widayanti, A. tanpa tahun, Minyak Jelantah Sebagai Bahan Baku Pembuatan Sabun Transparan, *e-Jurnal Universitas Muhammadiyah Prof. Dr. Hamka*.
- Standar Nasional Indonesia. 1994, *Standar Mutu Sabun Mandi*, Jakarta: Dewan Standarisasi Nasional.
- Standar Nasional Indonesia. 2008, *Virgin Coconut Oil*, Jakarta: Dewan Standarisasi Nasional.
- Standar Nasional Indonesia. 2016, *Sabun Mandi Padat*, Jakarta: Dewan Standarisasi Nasional.
- Tranggono, R.I., dan Latifah, F. 2007, *Buku Pegangan Ilmu Kosmetik*, PT. Gramedia Pustaka Utama, Jakarta.
- Thibodeau, A. and Amari, S. 2009, *Maintenance and Repair of the Hydrolipidic Film with Skin Mimetic Emollients and Surfactants*. Cosmetic Science Technology, Milan, Italy.
- Vivian, O.P., Nathan, O., Osano, A., Mesopirr, L. and Omwoyo, W.N. 2014, Assessment of the Physicochemical Properties of Selected Commercial Soaps Manufactured and Sold in Kenya, *Open Journal of Applied Sciences*, **4**: 433-440.
- Voeste, T. and Buchold, H. 1984, Production Fatty Alcohols From Fatty Acids, *JAOCs*, **61**(2): 350-352.

- Walstra, P. 1989, 'Principles of Foam Formation and Stability', in Wilson, A.J., *Foams: Physics, Chemistry and Structure*, Springer, Berlin, pp 1-2.
- Wardani, I.E. 2007. 'Uji Kualitas VCO Berdasarkan Cara Pembuatan dari Proses pengadukan Tanpa Pemancingan dan Proses Pengadukan dengan Pemancingan'. *Skripsi*, Sarjana MIPA, UNS.
- Widiyanti, Y. 2009, 'Kajian Pengaruh Jenis Minyak Terhadap Mutu Sabun Transparan', *Skripsi*, Sarjana Teknologi Pertanian, Institut Pertanian Bogor, Bogor.
- Widyasari, A. 2010, 'Kajian Pengaruh Jenis Minyak dan Konsentrasi Gliserin Terhadap Mutu Sabun Transparan', *Skripsi*, Sarjana Teknologi Pertanian, Institut Pertanian Bogor, Bogor.
- Widyasanti, A. dan Hasna, A.H. 2016, Kajian Pembuatan Sabun Padat Transparan Basis Minyak Kelapa Murni dengan Penambahan Bahan Aktif Ekstrak Teh Putih, *Jurnal Penelitian Teh dan Kina*, **19(2)**: 179-195.
- Willcox, M.J. 2000, 'Soap', in Butler, H., *Poucher's Perfumes, Cosmetics and Soaps*, 10<sup>th</sup> ed., Kluwer Academic Puslisher, London, pp 462-464.
- Wilkinson, J.B. and Moore, R.J. 1982, *Harry's Cosmeticology*, 7th ed., George Godwin, London.
- Youn, S.W., Na, J.I., Choi, S.Y., Huh, C.H. and Park, K.C. 2005, Regional and Seasonal Variations in Facial Sebum Secretions: a Proposal For The Definition of Combination Skin Type, *Skin Research and Technology*, **11**: 189-195.
- Zulkifli, M. dan Estiasih, T. 2014, Sabun Dari Distilat Asam Lemak Minyak Sawit: Kajian Pustaka, *Jurnal Pangan dan Agroindustri*, **2(4)**: 170-177.