

DAFTAR PUSTAKA

- Abate, Miseker E. (2013). Shedding New Light on Acne: The Effects of Photodynamic Therapy on *Propionibacterium acnes*. *Student Pulse*, 5(09).
- Afianti, H. P., & Murrkmiyadi, M. (2015). Pengaruh Variasi Kadar Gelling Agent Antibakteri Sediaan Gel Ekstrak Etanolik Kemangi (*Ocimum basilicum L. forma citratum* Back.). *Majalah Farmaseutik*, 11(2), 307–315.
- Agrios, G.N. (2005). *Plant Pathology* (5th ed). California: Academic Press.
- Ali, S. M. Dan Yosipovitch, G. (2013). Review Article, Skin pH: From Basic Science to Basic Skin Care, *Acta Derm Venerol.* USA.
- Allen, L.V. (2002). *The art science and technology of pharmaceutical compounding*. Washington D.C.: American Pharmaceutical Association. 308 – 310.
- Ansel. (1989). *Pengantar Bentuk Sediaan Farmasi*. Edisi Keempat. Jakarta: UI – Press.
- Armstrong, R.W., Wuerflein, R.D. (1996). *Endocarditis Due to Propionibacterium granulosum*. California.
- Aulton, M.E., dan Taylor K.M.G. (2018). *Aulton's Pharmaceutics: The Design and Manufacture of Medicines* (5th ed). Churcichill Livingstone Elsevier.
- Barry, B. W., & Meyer, M. C. (1979). The rheological properties of carbopol gels I. Continuous shear and creep properties of carbopol gels. *International Journal of Pharmaceutics*, 2(1), 1–25.
- Basera, K., Bhatt, G., Kothiyal, P., dan Gupta, P. (2015). Nanoemulgel: A Novel Formulation Approach for Topical Delivery of Hydrophobic Drugs. *World Journal of Pharmacy and Pharmaceutical Sciences*. 4(10): 1872-1876.
- Bernard, P.B. (2012). Modern Aspects of Emulsion Science. *Emulsion – Recent Advances in Understanding*. Cambridge: Royal Science of Chemistry.
- Bhattacharjee, Manish. (2015). Re: What is correlation between temperature and pH? Does high temperature tend to decrease the pH?. Retrieved from: https://www.researchgate.net/post/What_is_correlation_between_temperature_and_pH_Does_high_temperature_tend_to_decrease_the_pH. Diakses pada: 27 Mei 2020.
- Bowe, W. P. dan Shalita, A. R. (2008). *Effective Over-the-Counter Acne Treatments*. Seminars in Cutaneous Medicine and Surgery. 170–176. New York: Elsevier.

- British Pharmacopeia. (2007). Volume III. The Stationery Office. London.
- Bruggeman, H. (2010). *Skin: Acne and Propionibacterium acne Genomics*. Handbook of Hydrocarbon and Lipid Microbiology, 3216-3223.
- Bustomi, S., R. Rostiwati, Sudrajat, B. Leksono, S. Kosasih, I. Anggraini, D. Syamsuwida, Y. Lisnawati, Y. Mile, D. Djaenudin, Mahfudz, E. Rachman. (2008). *Nyamplung (Calophyllum inophyllum L.) Sumber Energi Biofuel yang Potensial*. Jakarta: Badan Litbang Kehutanan.
- Carstensen, J.T & C.T Rhodes. (2000). *Drug Stability Principles and Practice*. New York: Marcel Dekker Inc.
- Chambers, H. F., Deleo, F. R., & Mountain, R. (2009). Waves of resistance: Staphylococcus aureus in the antibiotic era. *Nature Reviews Microbiology* (Vol. 7), 629–641.
- Chime, S. A., Kenekwaku, F. C., & Attama, A. A. (2014). Nanoemulsions — Advances in Formulation, Characterization and Applications in Drug Delivery. *Journal of Application of Nanotechnology in Drug Delivery*, 77-126.
- Clunan, Anne. (2014). *Nanotechnology in A Globalized World Strategic Assessments of An Emerging Technology*. Munter: Naval Postgraduate School.
- Contassot, E., & French, L. E. (2014). New insights into acne pathogenesis: Propionibacterium acnes activates the inflammasome. *Journal of Investigative Dermatology*, 134(2), 310–313.
- Deleo, F. R., Otto, M., Kreiswirth, B. N., & Chambers, H. F. (2010). Staphylococcus aureus. *Journal of The Lancet*, 375(9725), 1557–1568.
- Desai, N., Dixit, R. & Nagarsenker, M. (2010). Self-nanoemulsifying drug delivery systems: formulation insights, applications and advances. *Nanomedicine (Lond.)*, 5(10), 1595-1616.
- Dewi, Aulia Kania. (2019). *Uji Stabilitas Freeze Thaw terhadap Sediaan Nanoemulsi Minyak dalam Air (M/A) Minyak Tamanu (Calophyllum inophyllumL)*. Bandung.
- Djuanda, Adhi. (2007). *Ilmu Penyakit Kulit dan Kelamin* (Edisi Ke – 5). Jakarta: Balai Penerbit FKUI.
- Dragicevic, N., & Maibach, H. I. (2015). Skin Deep: The Basics of Human Skin Stunture and Drug Penetration. *Percutaneous Penetration Enhancers Chemical Methods in Penetration Enhancement: Drug Manipulation Strategies and Vehicle Effects*, 1–10.
- Dweck, A. C., & Meadows, T. (2002). Tamanu (Calophyllum inophyllum) - The African, Asian, Polynesian and Pacific Panacea. *International Journal of*

Cosmetic Science, 24(6), 341–348.

- Eroschenko, V. P. (2012). *Atlas Histologi diFiore*. Jakarta: EGC.
- Feldman, S.; Careccia, R.E.; Barham, K.L.; Hancox, J. (2004). Diagnosis and Treatment of Acne. *Journal of American Family Physician*. 69(9), 2123-2130.
- Fiume, M. M., Bergfeld, W. F., Belsito, D. V., Hill, R. A., Klaassen, C. D., Liebler, D., ... Andersen, F. A. (2012). Safety Assessment of Propylene Glycol, Tripropylene Glycol, and PPGs as Used in Cosmetics. *International Journal of Toxicology*, 31, 245S-260S.
- Fox, L., Csongradi, C., Aucamp, M., Du Plessis, J., & Gerber, M. (2016). Treatment modalities for acne. *Molecules*, 21(8), 1–20.
- Garg, A. (2002). Spreading of Semisolid Formulations. *Pharmaceutical Technology*, 84-105.
- Garzoni, C., & Kelley, W. L. (2009). Staphylococcus aureus: new evidence for intracellular persistence. *Trends in Microbiology*, 17(2), 59–65.
- Gollnick, H. (2003). Current concepts of the pathogenesis of acne: Implications for drug treatment. *Drugs*, 63(15), 1579–1596.
- Gonzalez, S., Fernandez-Lorente, M. & Gilaberte-Calzada, Y. (2016). The Latest on Skin Photoprotection. *Clinics in Dermatology*, 26, 614-626.
- Gupta, M., Agrawal, U., & Vyas, S. P. (2012). Nanocarrier-based topical drug delivery for the treatment of skin diseases. *Expert Opinion on Drug Delivery*, 9(7), 783–804.
- Harien. (2010). *Anatomi Fisiologi Kulit dan Penyembuhan Luka*. Malang: Universitas Muhammadiyah Malang.
- Islam, M.T., Rodriguez-Hornedo, N., Ciotti, S., & Ackermann, C. (2004). Rheological Characterization of Topical Carbomer Gels Neutralized to Different pH. *Pharmaceutical Research*, 21(7), 1192 - 1199.
- Jaiswal, M., Dudhe, R., & Sharma, P. K. (2015). Nanoemulsion: an advanced mode of drug delivery system. *Biotech*, 5(2), 123–127.
- James, W. D. (2005). Acne. *The New England Journal of Medicine*, 1463–1472.
- Jawetz et al. (2008). *Medical Microbiology* (24th ed). North America: Lange Medical book.
- Katekhong, W., dan Charoenrein, S. (2012). The Effect of Rice Aging on The Freeze-Thaw Stability Flour Gels. *Carbohydrate Polymers*, 89(3). 777 - 782. Thailand.
- Katsambas, A., & Papakonstantinou, A. (2004). Acne : Systemic Treatment. *Clinics*

of *Dermatology*, 412-414.

- Kementerian Kesehatan RI. (2014). *Farmakope Indonesia*. Edisi V. Jakarta: Kementerian Kesehatan RI.
- Kenneth, Todar., (2008). *Staphylococcus aureus and Staphylococcal disease*. <http://textbookofbacteriology.net/staph.html>. Diakses pada 26 November 2019.
- Khan, A. F., Hana, H. K., Sheak, J., & Begum, K. (2015). Antibiotic Sensitivity of *Staphylococcus aureus* and *Staphylococcus epidermidis* Isolated from Acne Patients. *Bangladesh Pharmaceutical Journal*, 18(2), 121–125.
- Kolarsick, P. A. J., Kolarsick, M. A., & Goodwin, C. (2014). Anatomy and Physiology of the Skin. *Journal of the Dermatology Nurses' Association*, 3(4), 203–213., 2(2), 120.
- Kuchler, S., Radowski, M.R., Blaschke, T., Dathe, M., Plendl, J., Haag, R., Schafer-Korting, S., Kramer, K.D. (2009). Nanoparticle for Skin Penetration Enhancement - A Comparison Of A Dendritic CoreMultishell-Nanotransporter and Solid Lipid Nanoparticles. *European Journal of Pharmaceutics and Biopharmaceutics*, 71, 243-250.
- Kulkarni, V. S., & Shaw, C. (2016). Use of Polymers and Thickeners in Semisolid and Liquid Formulations. *Essential Chemistry for Formulators of Semisolid and Liquid Dosages*, 43–69.
- Kusantati, H., Prihatin, P. T., & Wiana, W. (2008). *Tata Kecantikan Kulit untuk Sekolah Menengah Kejuruan*.
- Kusuma, S. A. F. (2009). *Staphylococcus aureus*. Bandung: Univeristas Padjajaran.
- Lachman, L., & Lieberman, H. A. (1994). *Teori dan Praktek Farmasi Industri*. Jakarta: UI Press.
- Lavers, I. (2014). Diagnosis and management of acne vulgaris in aesthetic practice. *Journal of Aesthetic Nursing*, 3(10), 482–489.
- Léguillier, T., Lecsö-Bornet, M., Lémus, C., Rousseau-Ralliard, D., Lebouvier, N., Hnawia, E. (2015). The wound healing and antibacterial activity of five ethnomedical *Calophyllum inophyllum* oils: An alternative therapeutic strategy to treat infected wounds. *PLoS ONE*, 10(9), 1–20.
- Lim, T. K., & Lim, T. K. (2012). *Calophyllum inophyllum*. *Edible Medicinal And Non-Medicinal Plants*, 7–20.
- Liu, W. H., Liu, Y. W., Chen, Z. F., Chiou, W. F., Tsai, Y. C., & Chen, C. C. (2015). Calophyllolide content in *Calophyllum inophyllum* at different stages of maturity and its osteogenic activity. *Molecules*, 20(7), 12314–12327.

- Lovelyn, C., & Attama, A. A. (2011). Current State of Nanoemulsions in Drug Delivery. *Journal of Biomaterials and Nanobiotechnology*, 02(05), 626–639.
- Marchwińska, K., & Michocka, K. (2017). The Antimicrobial Properties of Selected Oils Used as Cosmetics Compounds. *Studia Oeconomica Posnaniensia*, 5(7), 35–44.
- Martin, A., J., Swarbrick, dan A. Cammarata. (1993). *Farmasi Fisik: Dasar-dasar Farmasi Fisik dalam Ilmu Farmasetika*. Edisi Ketiga. Penerjemah: Yoshita. Jakarta: UI - Press.
- Martini, F. (2006). Fundamentals of Anatomy and Physiology. *Pearson Education Inc.* p. 153-78.
- Meissner, H. O. (2011). The effect of Tamanu oil (*Calophyllum inophyllum*) on anaerobic bacteria isolated from respiratory tract. *Postepy Fitoterapii* (2), 159–163.
- Morelli, JG. (2011). Acne. In: *Nelson Textbook of Paediatrics (Kligman RM, Stanton BF, Schor NF, St. Gerne JW, Behrman RE, eds)*. Saunders Elsevier. Philadelphia.
- Mou, D., et. al. (2008). Hydrogel Thickened Nanoemulsion Sistem for Topical Delivery of Lipophilic Drugs. *Interational Journal of Pharmaceutics*, 35(1). 270.
- Nakatsuji, T., Tang, D. chu C., Zhang, L., Gallo, R. L., & Huang, C. M. (2011). Propionibacterium acnes camp factor and host acid sphingomyelinase contribute to bacterial virulence: Potential targets for inflammatory acne treatment. *PLoS ONE*, 6(4).
- Nast, A., Dréno, B., Bettoli, V., Degitz, K., Erdmann, R., Finlay, A. Y., Gollnick, H. (2012). European evidence-based (S3) guidelines for the treatment of acne. *Journal of the European Academy of Dermatology and Venereology*, 26(SUPPL. 1), 1–29.
- Olutunmbi, Y., Paley, K., & English, J. C. (2008). Adolescent Female Acne: Etiology and Management. *Journal of Pediatric and Adolescent Gynecology*, 21(4), 171–176.
- Paye, M., & Maibach, H. I. (2005). Handbook of Cosmetic Science and Technology Second Edition. In *Handbook of Cosmetic Science and Technology Second Edition*.
- Prabakaran K, Britto J. (2012). Biology, agroforestry and medicinal value of *Calophyllum inophyllum* L. (Clusiaceae). A review. *Int J Nat Prod Res*.
- Prabowo, Albertus Juannino. (2015). *Optimasi Carbopol 940 sebagai Gelling Agent dan Propilenglikol sebagai Humektan dalam Sediaan Emulgel*

Sunscreen Ekstrak Kencur (Kaempferia galanga L.): Aplikasi Desain Faktorial. Yogyakarta.

- Rahman, M., Akhter, S., Ahmad, J., Ahmad, M. Z., Beg, S., & Ahmad, F. J. (2014). Nanomedicine-based drug targeting for psoriasis: Potentials and emerging trends in nanoscale pharmacotherapy. *Expert Opinion on Drug Delivery*, 12(4), 635–652.
- Saising, J., Singdam, S., Ongsakul, M., & Voravuthikunchai, S. P. (2012). Lipase, protease, and biofilm as the major virulence factors in staphylococci isolated from acne lesions. *BioScience Trends*, 6(4), 160–164.
- Saraung, V., Yamlean, P. V., & Citraningtyas, G. (2018). Pengaruh Konsentrasi Basis Gel Ekstrak Etanol Daun Tapak Kuda (*Ipomoea Pes-Caprae* (L.) R. Br.) Terhadap Aktivitas Antibakteri pada *Staphylococcus aureus*. *Pharmacon*, 7(3), 220–229.
- Sativa, O., Yuliet, & Sulastri, E. (2014). Uji Aktivitas Antiinflamasi Gel Ekstrak Buah Kaktus (*Opuntia elatior* Mill.) Pada Tikus (*Rattus norvegicus* L.) Yang Diinduksi Lamda Karagenan Study. *Online Journal of Natural Science*, 3(2), 79–94.
- Sayuti, N.A. (2015). Formulasi dan Uji Stabilitas Fisik Sediaan Gel Ekstrak Daun Ketepeng Cina (*Casia alata* L.). *Jurnal Kefarmasian Indonesia*, 5(2), 74 - 82. Surakarta.
- Sengupta, P., dan Chatterjee, B. (2017). Potential and Future Scope of Nanoemulgel Formulation for Topical Delivery of Lipophilic Drugs. *International Journal of Pharmaceutics*, 526(1-2). Malaysia.
- Sheskey, P.J. Cook, Walter G., dan Cable, Colin G. (2017). *Handbook of Pharmaceutical Excipients*. (8th Edition) Lexi-Comp: American Pharmaceutical Association, Inc.
- Sigh, K.P., S. Umesha, and B.P. Salimath. (2012). A Novel Liquid Oral Formulation for 1 - Octacosanol an Anticancer Drug and Its Stability Study. *Indian Journal of Research in Pharmacy and Biotechnology*, 3(3). 186.
- Strauss, J. S., Krowchuk, D. P., Leyden, J. J., Voorhees, A. S. Van, Beutner, K. A., & Sieck, C. K. (2007). Guidelines of care for acne vulgaris management. *Journal American Academy of Dermatology*, 651–663.
- Sundberg, J. P., Booth, C. J., Nanney, L. B., Fleckman, P., & King, L. E. (2018). Skin and Adnexa. In *Comparative Anatomy and Histology* (Second Edi).
- Sutrisno, L. (2014). *Formulasi Sediaan Pelembab Ekstrak Lidah Buaya (Aloe vera L.) dengan Kombinasi Gliserin dan Propilenglikol dalam Basis Vanishing Cream*. Skripsi. Surabaya.

- Syahrurachman, dkk. (2010). *Buku Ajar Mikrobiologi Kedokteran*. Jakarta: Binarupa Aksara Publishers.
- Thermo Scientific. (2016). *Automatic Temperature Compensation and pH Measurement*. 1 - 3.
- Tjekyan, R. (2008). Kejadian dan Faktor Resiko Akne Vulgaris. *Media Medika Indonesiana*, 43(1), 37-43–43.
- Toledo, Mettler. (n.d.). May 27, 2020. https://www.mt.com/id/en/home/library/know-how/lab-analytical-instruments/faq_electrodes.html
- Tortora. (2006). *Principles Of anatomy and Physiology*. USA.
- Tranggono, R.I. dan Latifah, F. (2007). *Buku Pedoman Ilmu Pengetahuan Kosmetik*. Jakarta: Gramedia Pustaka Utama.
- Tuchayi, S., Makrantonaki, E., Ganceviciene, R., Dessinioti, C., Feldman, S. R., & Zouboulis, C. C. (2015). Acne vulgaris. *Nature Reviews. Disease Primers*, 1.
- U.S. Pharmacopoeia. *The United States Pharmacopeia, USP 30/The National Formulary, NF 25*. (2007). Roekville, MD: U.S. Pharmacopeia Convention, Inc. 485.
- Vasanthakumari, R. (2007). *Textbook of Microbiology*. New Delhi: BI Publications.
- Verjan, Gomez J.C., Hernandez, Rodriguez, dan Chilpa, Reyes. (2014). Molecular Mechanism Involved in The Cytotoxicity Induced by Coumarins form *Calophyllum brasiliense* in K562 Leukemia Cell. *J. Pharm. Pharmacol.* 1189-1195. Mexico
- Vogt, A., Combadiere, B., Hadam, S., Stieler, K. M., Lademann, J., Schaefer, H., Blume-Peytavi, U. (2006). 40 nm, but not 750 or 1,500 nm, nanoparticles enter epidermal CD1a+ cells after transcutaneous application on human skin. *Journal of Investigative Dermatology*, 126(6), 1316–1322.
- Wahyuddin, M., Kurniati, A., & Aridew. (2018). *pengaruh konsentrasi carbopol 940 terhadap stabilitas fisik sediaan masker ekstrak buah mengkudu (Morinda citrifolia L.) Sebagai Antijerawat Munifah*. 6(1).
- Wasitaatmadja, S. (2010). *Akne Vulgaris*. Ilmu Penyakit Kulit dan Kelamin. ed.6. Jakarta: Balai Penerbit FK UI.
- Wohingati, Klara Yunita. (2017). *Formulasi dan Uji Karakterisasi Fisik Nanoemulsi Minyak Atsiri Daun Kemangi (Opium basilicum L.)*. Semarang: Akademi Farmasi Theresiana.
- Wong, R., Geyer, S., Weninger, W., Guimberteau, J. C., & Wong, J. K. (2016). The dynamic anatomy and patterning of skin. *Experimental Dermatology*, 25(2),

92–98.

- Yimdjo, M. C., Azebaze, A. G., Nkengfack, A. E., Meyer, A. M., Bodo, B., & Fomum, Z. T. (2004). Antimicrobial and cytotoxic agents from *Calophyllum inophyllum*. *Phytochemistry*, 65(20), 2789–2795.
- Yukuyama, M. N., Ghisleni, D. D. M., Pinto, T. J. A., & Bou-Chacra, N. A. (2016). Nanoemulsion: Process selection and application in cosmetics - A review. *International Journal of Cosmetic Science*, 38(1), 13–24.
- Zaenglein AL, Graber EM, Thiboutot DM, Strauss JS. (2012) *Acne Vulgaris and Acneiform Eruptions*. Dalam: Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ, editor. *Fitzpatrick's Dermatology in General Medicine*. Edisi ke-7. New York: McGraw Hill; 2008. h.690-703.
- Zaenglein, A. L. (2018). Acne vulgaris. *New England Journal of Medicine*, 379(14), 1343–1352.
- Zouboulis, C. C. (2003). *Update and Future of Systemic Acne Treatment*. 37–53.

Lampiran 1

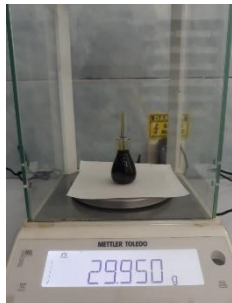
Perhitungan Bobot Jenis dan Viskositas Relatif Minyak Tamanu



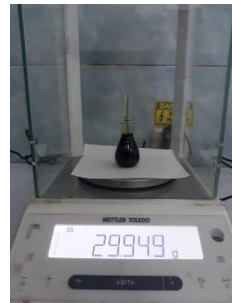
Bobot piknometer kosong (W_1)



Bobot piknometer dan aquadest (W_2)



Bobot piknometer dan minyak tamanu replikasi 1 (W_3)



Bobot piknometer dan minyak tamanu replikasi 2 (W_3)



Bobot piknometer dan minyak tamanu replikasi 3 (W_3)

A. Bobot Jenis

$$\text{BJ Minyak Tamanu} = \frac{W_3 - W_1}{W_2 - W_1}$$

Replikasi ke-	W_1	W_2	W_3	BJ Minyak Tamanu (g/cm^3)
1			29,950	$\frac{29,950 - 18,808}{30,616 - 18,808} = 0,9436$
2	18,808	30,616	29,949	$\frac{29,949 - 18,808}{30,616 - 18,808} = 0,9435$
3			29,949	$\frac{29,949 - 18,808}{30,616 - 18,808} = 0,9435$
Rata - rata				$\frac{0,9436 + 0,9435 + 0,9435}{3} = 0,9435 \pm 0,0001$

Hasil rata-rata pengujian bobot jenis minyak tamanu, yaitu $0,9435 \pm 0,0001 \text{ g/cm}^3$. Nilai tersebut memenuhi rentang nilai minyak tamanu $0,890 - 0,934 \text{ g/cm}^3$ (Raharivelomanana dkk., 2018).