

## DAFTAR PUSTAKA

- Anonim, 2007, *European Pharmacopoeia*, 5 ed., European Directorate for the Quality of Medicines & HealthCare, Strasbourg.
- Anonim, 2008, *SNI (Indonesia National Standard) 7381:2008 Mengenai Minyak Kelapa Murni (VCO)*, Badan Standarisasi Nasional (BSN), Indonesia.
- Anonim, 2009, *APCC Standards for Virgin Coconut Oil*, Asian and Pacific Coconut Community (APCC).
- Anonim, 2015, Scientific Opinion on The Re-Evaluation Of Polyoxyethylene Sorbitan Monolaurate (E 432), Polyoxyethylene Sorbitan Monooleate (E 433), Polyoxyethylene Sorbitan Monopalmitate (E 434), Polyoxyethylene Sorbitan Monostearate (E 435) and Polyoxyethylene Sorbitan Tristearate (E 436) as Food Additives, *EFSA J.*, 13(7), 1-74.
- Anonim, 2016a, *Indonesian Biodiversity Strategy and Action Plan 2015 - 2020*, Kementerian Perencanaan Pembangunan Nasional (BAPPENAS).
- Anonim, 2016b, Safety and Efficacy of Polyoxyethylene (20) Sorbitan Monooleate as a Feed Additive for All Animal Species, *EFSA J.*, 14(3), 1-18.
- Assunção, M. L., Ferreira, H. S., dos Santos, A. F., Cabral, C. R., dan Florêncio, T. M. M. T., 2009, Effects of Dietary Coconut Oil on the Biochemical and Anthropometric Profiles of Women Presenting Abdominal Obesity, *Lipids*, 44(7), 593–601.
- Bayrak, Y., dan Iscan, M., 2005, Studies on the Phase Behavior of the System Non-Ionic Surfactant/Alcohol/Alkane/H<sub>2</sub>O, *Colloids Surf. A Physicochem. Eng. Asp.*, 268(1–3), 99–103.
- Cardon, D., 2007, *Natural Dyes: Sources Tradition Technology and Science*, Archetype Publ., London.

- Chang, X., Li, X., Ge, S., Tan, G., Wang, Z., Ma, Y., Niu, L., dan Li, Q., 2023, Insight into the Oil Removal Mechanism of Quaternary Ammonium Ionic Liquid Microemulsions for Oily Sludge Treatment, *Sustain. Energy Fuels*, 7(9), 2153–62.
- Cho, Y.-H., Kim, S., Bae, E. K., Mok, C. K., dan Park, J., 2008, Formulation of a Cosurfactant-Free O/W Microemulsion Using Nonionic Surfactant Mixtures, *J. Food Sci.*, 73(3), E115–21.
- Cirin, D., Posa, M., Krstonosic, V., dan Milanovic, M., 2012, Conductometric Study of Sodium Dodecyl Sulfate - Nonionic Surfactant (Triton X-100, Tween 20, Tween 60, Tween 80 Or Tween 85) Mixed Micelles in Aqueous Solution, *Hem. Ind.*, 66(1), 21–8.
- Dai, J., Kim, S. M., Shin, I.-S., Kim, J. D., Lee, H. Y., Shin, W. C., dan Kim, J.-C., 2014, Preparation and Stability of Fucoxanthin-Loaded Microemulsions, *J. Ind. Eng. Chem.*, 20(4), 2103–10.
- Dalimartha, S., 2009, *Atlas Tumbuhan Obat Indonesia*, Vol. 6, Pustaka Bunda, Jakarta.
- Danielsson, I., dan Lindman, B., 1981, The Definition of Microemulsion, *Colloids Surf.*, 3(4), 391–2.
- Dapson, R., dan Bain, C., 2015, Brazilwood, Sappanwood, Brazilin and the Red Dye Brazilein: from Textile Dyeing and Folk Medicine to Biological Staining and Musical Instruments, *Biotech. Histochem.*, 90(6), 401–23.
- DebMandal, M., dan Mandal, S., 2011, Coconut (*Cocos nucifera* L.: Arecaceae): In Health Promotion and Disease Prevention, *Asian Pac. J. Trop. Med.*, 4(3), 241–7.
- Díaz, G. C., Tapanes, N. de la C. O., Câmara, L. D. T., dan Aranda, D. A. G., 2014, Glycerol Conversion in the Experimental Study of Catalytic Hydrolysis of

Triglycerides for Fatty Acids Production Using Ni or Pd On Al<sub>2</sub>O<sub>3</sub> Or SiO<sub>2</sub>,  
*Renew. Energy*, 64, 113–22.

Dumancas, G., Viswanath, L., Leon, A., Ramasahayam, S., Maples, R., Hikkaduwa  
Koralege, R., Don, U., Perera, U. D. N., Langford, J., Shakir, A., dan Castles,  
S., 2016, Health Benefits of Virgin Coconut Oil, Dalam *Vegetable Oil:  
Properties, Uses and Benefits*.

Falbe, J. (ed.), 1987, *Surfactants in Consumer Products*, Springer Berlin  
Heidelberg, Berlin, Heidelberg.

Fardhyanti, D. S., dan Riski, R. D., 2015, Pemungutan Brazilin dari Kayu Secang  
(Caesalpinia Sappan L) dengan Metode Maserasi dan Aplikasinya untuk  
Pewarnaan Kain, *JBAT*, 4(1), 6–13.

Flanagan, J., Kortegaard, K., Neil Pinder, D., Rades, T., dan Singh, H., 2006,  
Solubilisation of Soybean Oil in Microemulsions Using Various Surfactants,  
*Food Hydrocoll.*, 20(2–3), 253–60.

Friberg, S. E., dan Chiu, M., 1992, Phase Diagrams of Water and Sodium Dodecyl  
Sulfate Combined with Four Commercial Nonionic Surfactants, *J. Am. Oil  
Chem. Soc.*, 69(7), 653–9.

Froelich, A., dan Osmałek, T., 2020, Microemulsions as Antioxidant Carriers,  
Dalam *Emulsion-based Encapsulation of Antioxidants*, Springer, Cham.

Gadhawe, A., 2014, Determination of Hydrophilic-Lipophilic Balance Value, *Int. J.  
Sci. Res.*, 3, 573–5.

Ghosh, P., dan Murthy, R., 2006, Microemulsions: a Potential Drug Delivery  
System, *Curr. Drug Deliv.*, 3(2), 167–80.

Goyal, A. K., Garg, T., Bhandari, S., dan Rath, G., 2017, Advancement in  
Pulmonary Drug Delivery Systems for Treatment of Tuberculosis, Dalam  
*Nanostructures for Drug Delivery*, 669–95, Elsevier.

- Hait, S. K., dan Moulik, S. P., 2001, Determination of Critical Micelle Concentration (CMC) of Nonionic Surfactants by Donor-Acceptor Interaction with Iodine and Correlation of CMC with Hydrophile-Lipophile Balance and Other Parameters of the Surfactants, *J. Surfactants Deterg.*, 4(3), 303–9.
- Hewa Pathirana, D., Yalagama, C., Jayawardhana Arachige, D., dan Senarathne, M., 2021, Physicochemical Properties of Virgin Coconut Oil Extracted from Different Coconut (*Cocos nucifera* L) Varieties, *CORD*, 37(2021), 1–10.
- Hong, I. K., Kim, S. I., dan Lee, S. B., 2018, Effects of HLB Value on Oil-In-Water Emulsions: Droplet Size, Rheological Behavior, Zeta-Potential, and Creaming Index, *J. Ind. Eng. Chem.*, 67, 123–31.
- Hu, J., Yan, X., Wang, W., Wu, H., Hua, L., dan Du, L., 2008, Antioxidant Activity In Vitro of Three Constituents from *Caesalpinia Sappan* L, *Tsinghua Sci. Technol.*, 13(4), 474–9.
- Indirasvari K. S., N., Permana, I. D. G. M., dan Suter, I. K., 2018, Stabilitas Mikroemulsi VCO Dalam Air pada Variasi HLB dari Tiga Surfaktan Selama Penyimpanan, *J. ITEPA*, 7(4), 184.
- Janakiraman, A. K., Suhail, M., Khan, A., Naeem, A., dan Badshah, S. F., 2019, Surfactants and Their Role in Pharmaceutical Product Development: an Overview, *J. Pharm. Pharm.*, 6(2), 72–82.
- Juarranz, A., Horobin, R. W., dan Proctor, G. B., 1986, Prediction of In Situ Fluorescence of Histochemical Reagents Using a Structure-Staining Correlation Procedure, *Histochemistry*, 84(4–6), 426–31.
- Jusnita, N., dan Tridharma, W. S., 2019, Karakterisasi Nanoemulsi Ekstrak Daun Kelor (*Moringa oleifera* Lamk.), *JSFK*, 6(1), 16.
- Kale, S. N., dan Deore, S. L., 2016, Emulsion Micro Emulsion and Nano Emulsion: A Review, *Sys. Rev. Pharm.*, 8(1), 39–47.

- Kerwin, B. A., 2008, Polysorbates 20 and 80 Used in the Formulation of Protein Biotherapeutics: Structure and Degradation Pathways, *J. Pharm. Sci.*, 97(8), 2924–35.
- Ketaren, S., 2008, *Pengantar Teknologi Minyak dan Lemak Pangan*, UI-Press, Jakarta.
- Khor, Y., Koh, S., Long, K., Long, S., Ahmad, S., dan Tan, C., 2014, A Comparative Study of the Physicochemical Properties of a Virgin Coconut Oil Emulsion and Commercial Food Supplement Emulsions, *Molecules*, 19(7), 9187–202.
- Kiran, K., dan Asad, M., 2008, Wound Healing Activity of Sesamum Indicum L Seed and Oil in Rats., *Indian J. Exp. Biol.*, 46(11), 777–82.
- Kommuru, T. R., Gurley, B., Khan, M. A., dan Reddy, I. K., 2001, Self-Emulsifying Drug Delivery Systems (SEDDS) of Coenzyme Q10: Formulation Development and Bioavailability Assessment, *Int. J. Pharm.*, 212(2), 233–46.
- Kopanichuk, I. V., Vedenchuk, E. A., Koneva, A. S., dan Vanin, A. A., 2018, Structural Properties of Span 80/Tween 80 Reverse Micelles by Molecular Dynamics Simulations, *J. Phys. Chem. B.*, 122(33), 8047–55.
- Kralova, I., dan Sjöblom, J., 2009, Surfactants Used in Food Industry: A Review, *J Dispers. Sci. Technol.*, 30(9), 1363–83.
- Kumar, P., dan Mittal, K. L., 2018, *Handbook of Microemulsion Science and Technology*, 1 ed., CRC Press, Boca Raton.
- Lachman, L., Lieberman, H. A., dan Kanig, J. L., 1994, *Industrial Pharmacy Theory and Practice II*, III ed., UIPress, Jakarta.
- Li, R., Fang, Q., Li, P., Zhang, C., Yuan, Y., dan Zhuang, H., 2021, Effects of Emulsifier Type and Post-Treatment on Stability, Curcumin Protection, and Sterilization Ability of Nanoemulsions, *Foods*, 10(1), 149.

- Malik, M. A., Wani, M. Y., dan Hashim, M. A., 2012, Microemulsion Method: a Novel Route to Synthesize Organic and Inorganic Nanomaterials, *Arab. J. Chem.*, 5(4), 397–417.
- Mandal, S., Yadav, S., dan Nema, R. K., 2009, Antioxidant: a Review, *J. Chem. Pharm. Res.*, 1(1), 102–4.
- Mardiatmoko, G., dan Ariyanti, M., 2011, *Produksi Tanaman Kelapa (Cocos nucifera L.)*, Badan Penerbit Fakultas Pertanian, Universitas Pattimura, Ambon.
- Mardiyanto, M., Fithri, N. A., dan Tandry, M., 2018, Characterization and Optimization of Capryol-90, Polysorbate-80, And Peg-400 Proportion in Mefenamic Acid Self Nanoemulsifying Drug Delivery System (SNEDDS) With Simplex-Lattice-Design, *Sci. Technol. Indones.*, 3(4), 164.
- Marina, A. M., Che man, Y. B., Nazimah, S. A. H., dan Amin, I., 2009, Antioxidant Capacity and Phenolic Acids of Virgin Coconut Oil, *Int. J. Food. Sci. Nutr.*, 60(sup2), 114–23.
- McClements, D. J., 2012, Nanoemulsions versus Microemulsions: Terminology, Differences, and Similarities, *Soft Matter*, 8(6), 1719–29.
- Mehta, D., Rathod, H., dan Shah, D., 2015, Microemulsions: a Potential Novel Drug Delivery System, *Int. J. Pharm. Sci.*, 1(1), 48–60.
- Montalvo, G., Valiente, M., Mortensen, K., dan Gradzielski, M., 2001, Structural Changes Induced in the Surfactant System C<sub>12</sub>E<sub>4</sub>/Benzyl Alcohol/Water by the Admixture of the Cationic Surfactant Cetylpyridinium Chloride, *J. Colloid Interface Sci.*, 238(2), 251–8.
- Mortensen, A., Aguilar, F., Crebelli, R., Di Domenico, A., Dusemund, B., Frutos, M. J., Galtier, P., Gott, D., Gundert-Remy, U., Leblanc, J., Lindtner, O., Moldeus, P., Mosesso, P., Parent-Massin, D., Oskarsson, A., Stankovic, I.,

Waalkens-Berendsen, I., Woutersen, R. A., Wright, M., Younes, M., Boon, P., Chrysafidis, D., Gürtler, R., Tobback, P., Altieri, A., Rincon, A. M., dan Lambré, C., 2017, Re-evaluation of Sorbitan Monostearate (E 491), Sorbitan Tristearate (E 492), Sorbitan Monolaurate (E 493), Sorbitan Monooleate (E 494) and Sorbitan Monopalmitate (E 495) when Used as Food Additives, *EFSA J.*, 15(5), 1-56.

Munteanu, I. G., dan Apetrei, C., 2021, Analytical Methods Used in Determining Antioxidant Activity: a Review, *Int. J. Mol. Sci.*, 22(7), 3380.

Mustika, M., Fachrial, E., Girsang, E., dan Ehrich Lister, I. N., 2020, Effect of Virgin Coconut Oil Toward Antioxidant Endogen and Stress Oxidative on Rats Induced Doxorubicin, Dalam *2020 3rd International Conference on Mechanical, Electronics, Computer, and Industrial Technology (MECnIT)*, 390–3, IEEE.

Nakama, Y., 2017, Surfactants, Dalam *Cosmetic Science and Technology*, 231–44, Elsevier.

Ngamwonglumlert, L., Devahastin, S., Chiewchan, N., dan Raghavan, G. S. V., 2020, Color and Molecular Structure Alterations of Brazilin Extracted from *Caesalpinia Sappan L.* Under Different pH and Heating Conditions, *Sci. Rep.*, 10(1), 1–10.

Nirmal, N. P., Rajput, M. S., Prasad, R. G. S. V., dan Ahmad, M., 2015, Brazilin from *Caesalpinia Sappan Heartwood* and Its Pharmacological Activities: a Review, *Asian Pac. J. Trop. Med.*, 8(6), 421–30.

Nirmal, N. P., dan Panichayupakaranant, P., 2015, Antioxidant, Antibacterial, and Anti-Inflammatory Activities of Standardized Brazilin-Rich *Caesalpinia sappan* extract, *Pharm. Biol.*, 53(9), 1339–43.

- Ombick B., G., Mengata M., G., Tchamdjio N., E., dan Moukengue I., A., 2022, Investigation of the Thermal Aging of The Natural Monoester/Paper Mixed Insulation, *Electrical Engineering*, 104(5), 3561–70.
- Permana, A. D., Utami, R. N., Ramadhani, A., Dewy, M., dan Sugara, B., 2015, Formulation And Evaluation Microcapsules Of Caesalpinia Sappan Linn. Using Emulsion Solvent Evaporation Method, *International Journal of Technology Enhancements and Emerging Engineering Research*, 3, 121–5.
- Pontoh, J., dan Buyung, N. T. N., 2011, Analisa Asam Lemak Dalam Minyak Kelapa Murni (VCO) dengan Dua Peralatan Kromatografi Gas, *Jurnal Ilmiah Sains*, 11(2), 274–81.
- Premlal Ranjith, H. M., dan Wijewardene, U., 2006, Lipid Emulsifiers and Surfactants in Dairy and Bakery Products, Dalam *Modifying Lipids for Use in Food*, 393–428, Elsevier.
- Purba, B. A. V., Pujiarti, R., Masendra, M., dan Lukmandaru, G., 2023, Total Phenolic, Flavonoid, Tannin Content and DPPH Scavenging Activity of Caesalpinia sappan Linn. Bark, *Wood Research Journal*, 13(2), 63–8.
- Rao, J., dan McClements, D. J., 2011, Formation of Flavor Oil Microemulsions, Nanoemulsions and Emulsions: Influence of Composition and Preparation Method, *J Agric Food Chem*, 59(9), 5026–35.
- Rohman, A., Riyanto, S., dan Hidayati, N. K., 2007, Aktivitas Antioksidan, Kandungan Fenolik Total, dan Flavonoid Total Daun Mengkudu (*Morinda citrifolia* L), *AGRITECH*, 27(4), 147–51.
- Salager, J.-L., Antón, R. E., Sabatini, D. A., Harwell, J. H., Acosta, E. J., dan Tolosa, L. I., 2005, Enhancing Solubilization in Microemulsions—State of the Art and Current Trends, *J Surfactants Deterg*, 8(1), 3–21.

- Sasaki, Y., Hosokawa, T., Nagai, M., dan Nagumo, S., 2007, In Vitro Study for Inhibition of NO Production About Constituents of Sappan Lignum, *Biol Pharm Bull*, 30(1), 193–6.
- Satheesh, N., dan Prasad, N. B. L., 2012, Induced Fermentative Production of Virgin Coconut Oil, *Asian Journal of Food and Agro-Industry*, 5, 355–63.
- Schmitt, T. M., 2001, *Analysis of Surfactants*, 2 ed., CRC Press.
- Schramm, L. L., Stasiuk, E. N., dan Marangoni, D. G., 2003, Surfactants and Their Applications, *Annu. Rep. Prog. Chem., Sect. C: Phys. Chem.*, 99, 3–48.
- Semalty, A., 2021, *Industrial Pharmacy-I*, PharmaMed Press, Hyderabad.
- Sharma, A. K., Garg, T., Goyal, A. K., dan Rath, G., 2015, Role of Microemulsions in Advanced Drug Delivery, *Artif Cells Nanomed Biotechnol*, 1–9.
- Side, S., Putri, S., dan Musa, M., 2023, Analysis of The Chemical Content of Virgin Coconut Oil (VCO) with Raw Material of Coconut from Walenna Village, Sabbangparu District, Sengkang Regency, *Indonesian Journal of Fundamental Sciences*, 9(1), 1–6.
- Suhendra, L., Raharjo, S., Hastuti, P., dan Hidayat, C., 2012, Formulasi dan Stabilitas Mikroemulsi O/W sebagai Pembawa Fucoxanthin, *Agritech*, 32(3), 230–9.
- Sujatha, B., Himabindu, E., Bttu, S., dan Abbulu, K., 2020, Microemulsions-a Review, *J. Pharm. Sci. & Res.*, 12(6), 750–3.
- Szymczyk, K., Zdziennicka, A., dan Jańczuk, B., 2018, Adsorption and Aggregation Properties of Some Polysorbates at Different Temperatures, *J Solution Chem*, 47(11), 1824–40.

- Tang, J., Sun, J., dan He, Z.-G., 2007, Self-Emulsifying Drug Delivery Systems: Strategy for Improving Oral Delivery of Poorly Soluble Drugs, *Curr Drug ther*, 2(1), 85–93.
- Thorsteinsson, M. V., Richter, J., Lee, A. L., dan DePhillips, P., 2005, 5-Dodecanoylamino fluorescein as a Probe for the Determination of Critical Micelle Concentration of Detergents Using Fluorescence Anisotropy, *Anal Biochem*, 340(2), 220–5.
- ten Tije, A. J., Verweij, J., Loos, W. J., dan Sparreboom, A., 2003, Pharmacological Effects of Formulation Vehicles, *Clin Pharmacokinet*, 42(7), 665–85.
- Vaya, J., dan Aviram, M., 2001, Nutritional Antioxidants Mechanisms of Action, Analyses of Activities and Medical Applications, *Current Medicinal Chemistry-Immunology, Endocrine & Metabolic Agents*, 1(1), 99–117.
- Villarino, B. J., Dy, L. M., dan Lizada, Ma. C. C., 2007, Descriptive Sensory Evaluation of Virgin Coconut Oil and Refined, Bleached and Deodorized Coconut Oil, *LWT - Food Science and Technology*, 40(2), 193–9.
- Walker, D. L., Britton, C., Kim, D. H., Dufour, S., Weerasooriya, U., dan Pope, G. A., 2012, The Impact of Microemulsion Viscosity on Oil Recovery, Dalam *All Days*, SPE.
- Washiyama, M., Sasaki, Y., Hosokawa, T., dan Nagumo, S., 2009, Anti-inflammatory Constituents of Sappan Lignum, *Biol Pharm Bull*, 32(5), 941–4.
- Wen, Y., Hu, Y., dan Wang, X., 2016, Application of a Colorimeter for Turbidity Measurement, *J Phys Conf Ser*, 679, 012028.
- Widodo, N., Puspitarini, S., Widyananda, M. H., Alamsyah, A., Wicaksono, S. T., Masruri, M., dan Jatmiko, Y. D., 2022, Anticancer Activity of Caesalpinia

Sappan by Downregulating Mitochondrial Genes in A549 Lung Cancer Cell Line, *F1000Res*, 11, 169.

Winarni, I., dan Maulidina, R., 2018, Bioethanol Production from Bamboo Pulp using Enzymatic Sacharification with Several Concentration of Surfactant, *IOP Conf Ser Earth Environ Sci*, 209, 012051.

Yati, K., Srifiana, Y., dan Putra, F., 2017, Effect of Optimization of Tween 80 and Propylene Glycol as a Surfactant and Cosurfactant on the Physical Properties of Aspirin Microemulsion, *International Journal of Applied Pharmaceutics*, 9, 127.

Yuwono, M., Hendradi, E., dan Annisa, R., 2020, Design and Optimization of Eleutherine Palmifolia Extract-Loaded SNEDDS Using HLB Approach, *Journal of Research in Pharmacy*, 24(6), 943–51.

Zhang, W., Dai, X., Zhao, Y., Lu, X., dan Gao, P., 2009, Comparison of the Different Types of Surfactants for the Effect on Activity and Structure of Soybean Peroxidase, *Langmuir*, 25(4), 2363–8.