

DAFTAR PUSTAKA

- Afrilla, M.S., 2011, Efektivitas Ekstrak Daun Sirih Hijau Terhadap Pertumbuhan *Streptococcus mutans*, *Skripsi*, Fakultas Kedokteran Gigi, Universitas Sumatera Utara.
- Ahmad, N., Ahmad, F.J., Bedi, S., Sharma, S., Umar, S., Ansari, M.A., 2019. A novel Nanoformulation Development of Eugenol and their treatment in inflammation and periodontitis. *Saudi Pharm. J.* **27**: 778–790.
- Ali, A., Lim, X.Y., Wahida, P.F., 2018, The fundamental study of antimicrobial activity of *Piper betle* extract in commercial toothpastes. *J. Herb. Med.* **14**: 29–34.
- Alphabiosciences, 2020, *Brain Heart Infussion Agar*, [http : alphabiosciences.com/brain-heart-infussion-agar-b02-112.html](http://alphabiosciences.com/brain-heart-infussion-agar-b02-112.html), 25 April 2020
- Anindhita, M.A., Oktaviani, N., 2016. Formulasi Self-Nanoemulsifying Drug Delivery System (SNEDDS) Ekstak Daun Pepaya (*Carica papaya* L .) dengan Virgin Coconut Oil (VCO) sebagai Minyak Pembawa. *J. Pena Med.* **6**: 103–111.
- Ansel, H.C., Norred, W.P., Roth, I.L., 1969. Antimicrobial activity of dimethyl sulfoxide against *Escherichia coli*, *Pseudomonas aeruginosa*, and *Bacillus megaterium* *J. Pharm. Sci.* **58**: 836–839.
- Anonim., 2020, *Brain Heart Infussion*, [http : alphabiosciences.com/brain-heart-infussion-agar-b02-112.html](http://alphabiosciences.com/brain-heart-infussion-agar-b02-112.html), 24 April 2020.
- Amtha, R., 1997, *Kelainan Mukosa Rongga Mulut* Akibat Penggunaan Obat Kumur cit Febriany, H.D, 2013 *,Efek Hambat Berbagai Macam Obat Kumur Terhadap Pertumbuhan Bakteri Streptococcus mutans.*
- Atlas, R.M., 2004, *Handbook of Microbiological Media* Fourth Ed., CRC Press, United States of America.
- BacDive., 2019, *Streptococcus mutans*. *J. Dent. Assoc. Thai.* **29**: 114–122.
- Balakumar, K., Raghavan, C.V., Selvan, N.T., Prasad, R.H., & Abdu S., 2013, Self nanoemulsifying drug delivery system (SNEDDS) of Rosuvastatin calcium: Design, formulation bioavailability and pharmacokinetic evaluation. *Colloids Surfaces B Biointerfaces* **112**:337–343.
- Bali, V., Ali, M., Ali, J., 2010, Study of surfactant combinations and development of a novel nanoemulsion for minimising variations in bioavailability of ezetimibe. *Colloids Surfaces B Biointerfaces* **76**: 410–420.
- Balouiri, M., Sadiki, M., Ibsouda, S.K., 2016, Methods for in vitro evaluating antimicrobial activity: A review. *J. Pharm. Anal.* **6**: 71–79.
- Basak, S., Guha, P., 2017. Betel leaf (*Piper betle* L.) essential oil microemulsion: Characterization and antifungal activity on growth, and apparent lag time of *Aspergillus flavus* in tomato paste. *LWT - Food Sci. Technol.* **75**: 616–623.
- Beandrade, M.U., 2018, Formulasi dan Karakterisasi SNEDDS Ekstrak Jinten Hitam (*Nigella Sativa*) dengan Fase Minyak Ikan Hiu Cucut Botol (*Centrophorus* Sp) serta Uji Aktivitas Imunostimulan. *JPSCR J.*

- Pharm. Sci. Clin. Res.* **3**: 50.
- Bouchemal, K., Briançon, S., Perrier, E., Fessi, H., 2004. Nano-emulsion formulation using spontaneous emulsification: Solvent, oil and surfactant optimisation. *Int. J. Pharm.* **280**: 241–251.
- Carlsson, J., 2001. Nutritional requirements of Streptococcus mutans, Departemen of Oral Microbiology, University Umea, Umea. **3**: 54–67.
- Chairuk, P., Tubtimsri, S., Jansakul, C., Srimornsak, P., Weerapol, Y., 2020. Enhancing oral absorption of poorly water-soluble herb (Kaempferia parviflora) extract using self-nanoemulsifying formulation. *Pharm. Dev. Technol.* **25**: 340–350.
- Date, A.A., Desai, N., Dixit, R., Nagarsenker, M., 2010, Self-nanoemulsifying drug delivery systems: Formulation insights, applications and advances. *Nanomedicine* **5**: 1595–1616.
- Davis, W.W., Stout, T.R., 2015, Disc Plate Method of Microbiological Antibiotic Assay, Applied Microbiology, *American Society for Microbiology*, **22(4)** : 659-665.
- Departemen Kesehatan RI, 1979, *Farmakope Indonesia*, Edisi III, Jakarta.
- Departemen Kesehatan RI, 1995, *Farmakope Indonesia*, Edisi IV, Jakarta.
- Departemen Kesehatan RI., 2000. *Parameter standar umum ekstrak tumbuhan obat*, Jakarta.
- Departemen Kesehatan RI, 2008, *Farmakope Herbal Indonesia*, Jakarta.
- Departemen Kesehatan RI, 2010, *Farmakope Herbal Indonesia* Edisi I Suplemen 1, Jakarta.
- Deshpande, S.N., Kadam, D.G., 2013, GCMS analysis and antibacterial activity of Piper betle (Linn) leaves against Streptococcus mutans. *Asian J. Pharm. Clin. Res.* **6**: 99–101.
- Dita, G., 2019, FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI SABUN CAIR NANOEMULSI ESKTRAK DAUN SIRIH HIJAU (Piper betle L.) TERHADAP BAKTERI Staphylococcus aureus SECARA IN VITRO, *Skripsi*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.
- Dhika, T.S., 2007, Perbandingan EFEK ANTIBAKTERIAL BERBAGAI KONSENTRASI DAUN SIRIH (Piper betle Linn) TERHADAP STREPTOCOCCUS MUTANS, *Skripsi*, Fakultas Kedokteran Universitas Diponegoro, Semarang.
- Eloff, J.N., 2019. Avoiding pitfalls in determining antimicrobial activity of plant extracts and publishing the results. *BMC Complement. Altern. Med.* **19**: 1–8.
- FDA, 2020, *Brain Heart Infussion*, [http : fda.gov/food/laboratory-methods-food/bam-media-m24-brain-heart-infussion-bhi-broth-and-agar.html](http://fda.gov/food/laboratory-methods-food/bam-media-m24-brain-heart-infussion-bhi-broth-and-agar.html), 25 April 2020.
- Galanakis, E.C., Goulas, V., & Gekas, V. 2011. Predicting the solubilization preference of natural phenols to different solvents. In *11th International Congress on Engineering and Food* **1** : 1–6.
- Gani, B.A., Winiati, E., Bachtar, B.M., Soejoedono, R., Wibawan, I.W.T., 2006, Profil antigen *Streptococcus mutans* yang dideteksi dengan

- immunoglobulin ayam anti *Streptococcus mutans*, *Majalah Kedokteran Gigi*, **13**.
- Ghosh, V., Mukherjee, A., Chandrasekaran, N., 2014. Eugenol-loaded antimicrobial nanoemulsion preserves fruit juice against, microbial spoilage. *Colloids Surfaces B Biointerfaces*, **114**: 392–397.
- Griffith, R.S., Black, H.R., 2007. Erythromycin. *Med. Clin. North Am.* **54**: 1199–1215.
- Gupta, S., Chavhan, S., Sawant, K.K., 2011. Colloids and Surfaces A: Physicochemical and Engineering Aspects Self-nanoemulsifying drug delivery system for adefovir dipivoxil: Design , characterization , in vitro and ex vivo evaluation. *Colloids Surfaces A Physicochem. Eng. Asp.* **392**: 145–155.
- Hafizah, A.U., 2014. FORMULASI DAN UJI AKTIVITAS SELF-NANOEMULSIFYING DRUG DELIVERY SYSTEM (SNEDDS) SEBAGAI ANTI-HIPERKOLESTEROL DARI KOMBINASI EKSTRAK TEMULAWAK (*Curcuma xanthorrhiza* Roxb) DAN DAUN SAMBUNG NYAWA (*Gynura procumbent* (Lour) Merr) MENGGUNAKAN VIRGIN COCONUT OIL SEBAGAI MINYAK PEMBAWA, *Tesis*, Fakultas Farmasi Universitas Gadjah Mada.
- Handayani, F., Sundu, R., Sari, R.M., 2017. FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI *Streptococcus mutans* DARI SEDIAAN MOUTHWASH EKSTRAK DAUN JAMBU BIJI (*Psidium guajava* L.) **1**: 422–433.
- Hamdani, Y, 2018, *Pertumbuhan dan Pengendalian Mikroorganisme*, Materi Ajar Penunjang Mikrobiologi, Biologi FPMIPA UPI, IMSTEP.
- Hapsari, G.S., 2019, FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI NANOEMULSI EKSTRAK SIRIH HIJAU (*Piper betle* L.) TERHADAP *Staphylococcus aureus* dan *Escherichia coli*, *Skripsi*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.
- Harborne, J.B., 1998. *Phytochemical Methods A Guide To Modern Techniques Of Plant Analysis*, Third Edition, III. ed, Chapman & Hall. Chapman & Hall, London.
- Harwansh, R.K., Deshmukh, R., Rahman, M.A., 2019. Nanoemulsion: Promising nanocarrier system for delivery of herbal bioactives. *J. Drug Deliv. Sci. Technol.* **51**: 224–233
- Hazen, K.C., 2013. Influence of DMSO on antifungal activity during susceptibility testing in vitro. *Diagn. Microbiol. Infect. Dis.* **75**: 60–63.
- Hestieyonini, 2015, Perilaku menjaga kesehatan gigi dan mulut pada santri pondok pesantren al-azhar jember. *Stomatognatic (J.K.G Unej)* **10**: 17–20.
- Ibrahim, I., Usman, S., 2019, UJI AKTIVITAS SENYAWA BIOAKTIF ANTIMIKROBA DARI EKSTRAK DAUN SEMBUKAN (*Paederia Foetida* L.) PADA BAKTERI STAPHYLOCOCCUS AUREUS DENGAN METODE BIOAUTOGRAFI. *Hilos Tensados* **1**: 1–476.
- Inayatullah, S., 2012, Efek Ekstrak Daun Sirih Hijau (*Piper betle* L) Terhadap

- Pertumbuhan Bakteri *Staphylococcus aureus*., *Skripsi*, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Islam Negeri Syarif Hidayatullah, Jakarta.
- Juniatik, M., Hidayati, K., Wulandari, F.P., Pangestuti, N., 2017. FORMULATION OF NANOEMULSION MOUTHWASH COMBINATION OF LEMONGRASS OIL (*Cymbopogon citratus*) AND KAFFIR LIME OIL (*Citrus hystrix*) FOR ANTICANDIDIASIS AGAINST *Candida albicans* ATCC 10231, *Maj. Obat Tradis*, **22**: 7–15.
- Karthikeyan, R., Amaechi, B.T., Rawls, H.R., Lee, V.A., 2011. Antimicrobial activity of nanoemulsion on cariogenic *Streptococcus mutans*. *Arch. Oral Biol.* **56**: 437–445
- Khogta, S., Patel, J., Barve, K., Londhe, V., 2020. Herbal nano-formulations for topical delivery. *J. Herb. Med.* **20**: 100300.
- Koerniati, 2006, *Perkembangan Perawatan Gigi Masa Depan*, Andalas University Press, Sumatera.
- Komaiko, J., McClements, D.J., 2015. Low-energy formation of edible nanoemulsions by spontaneous emulsification: Factors influencing particle size. *J. Food Eng.* **146**: 122–128
- Komaiko, J.S., McClements, D.J., 2016, Formation of Food-Grade Nanoemulsions Using Low-Energy Preparation Methods: A Review of Available Methods. *Compr. Rev. Food Sci. Food Saf.* **15**: 331–352.
- Kottaa, S., Khana A.W, Ansharib S.H., Sharmac, R.K., and Ali J., 2014, Anti HIV Nanoemulsion Formulation : Optimization and in Vitro in Vivo Evaluation, *International Journal of Pharmaceutics*, **462** : 129-134.
- Kumala, S., 2008, EFEK ANTIBAKTERI EKSTRAK ETANOL DAUN CENGKEH (*Eugenia aromatic* L.). *J. Farm. Indones.* **4**: 82–87
- Kusumaningsari, V., Handajani, J., 2011. Efek Pengunyahan Permen Karet Gula dan Xylitol terhadap Pertumbuhan Bakteri *Streptococcus Mutans* pada Plak Gigi. *Maj. Kedokt. Gigi Indones.*
- Ladytama, S.R., Nurhapsari, A., Baehaqi, M., 2014, Efektivitas Larutan Ekstrak Jeruk Nipis (*Citrus aurantifolia*) Sebagai Obat Kumur Terhadap Penurunan Indeks Plak Pada Remaja Usia 12-15 Tahun - Studi di SMP Nurul Islami, Mijen, Semarang, *ODONTO Dental Journal* **1(1)**: 39–43.
- Larsen, A.T., Ogbonna, A., Abu-Rmaileh, R., Abrahamsson, B., Østergaard, J., Müllertz, A., 2012. SNEDDS containing poorly water soluble cinnarizine; development and in vitro characterization of dispersion, digestion and solubilization. *Pharmaceutics* **4**, 641–665.
- Lely, M.A., 2017. Pengaruh (pH) Saliva terhadap Terjadinya Karies Gigi pada Anak Usia Prasekolah. *Bul. Penelit. Kesehat.* **45**: 241–248.
- Li, J., Xie, S., Ahmed, S., Wang, F., Gu, Y., Zhang, C., Chai, X., Wu, Y., Cai, J., Cheng, G., 2017. Antimicrobial activity and resistance: Influencing factors. *Front. Pharmacol.* **8**: 1–11.
- Li, Y.F., Sun, H.W., Gao, R., Liu, K.Y., Zhang, H.Q., Fu, Q.H., Qing, S.L., Guo,

- G., Zou, Q.M., 2015. Inhibited biofilm formation and improved antibacterial activity of a novel nanoemulsion against cariogenic *Streptococcus mutans* in vitro and in vivo. *Int. J. Nanomedicine* **10**: 447–462.
- Manson, J.D., Eley, B.M., 2013, *Buku ajar periodonti*, Hipokrates, Jakarta.
- Mansjoer, A, 2000, *Kapita Selekta Kedokteran*, Edisi 3, Medica Aesculapulus FK UI, Jakarta.
- Martien, R., Mada, U.G., Adhyatmika, A., Mada, U.G., Farida, V., Sari, D.P., 2012. Perkembangan Teknologi Nanopartikel dalam Sistem Penghantaran Obat. *Maj. Farm.* **8**: 133–144.
- Mitsui, 1997, *New Cosmetic Science*, Elsevier Science B.V, Amsterdam.
- Moeljanto, R.D., 2003, *Khasiat Dan Manfaat Daun Sirih, Obat Mujarab dari Masa ke Masa*, Agromedia Pustaka, Bandung.
- Mostafa, N.M., 2018. Antibacterial activity of ginger (*Zingiber officinale*) leaves essential oil nanoemulsion against the cariogenic *Streptococcus mutans*. *J. Appl. Pharm. Sci.* **8**: 34–41.
- Mooryati, 1998, *Alam Sumber Kesehatan*, Balai Pustaka, Jakarta.
- Mulia, K., Putri, G.A., Krisanti, E., 2018. Encapsulation of mangosteen extract in virgin coconut oil based nanoemulsions: Preparation and characterization for topical formulation. *Mater. Sci. Forum* **929**: 234–242.
- Mulyadi, A.F., Schreiner, M., Dewi, I.A., 2018. Phenolic and volatile compounds, antioxidant activity, and sensory properties of virgin coconut oil: Occurrence and their relationship with quality. *AIP Conf. Proc.* 2021
- Mustika, A., Fatimah, N., Sari, G.M., 2019. Formulation and characterizations of self-nanoemulsifying drug delivery system of extract *Petiveria alliacea* (Singawalang) leaves. *Int. J. Appl. Pharm.* **11**: 61–65.
- National Standardization Agency, 2008. Virgin Coconut Oil (INS 7381:2008). *Indones. Natl. Stand.* 1–28.
- Nasir, M., Aliaa, N., 2019, Development of Nanoemulsion containing Piper betle L. Essential Oil as an effective natural insecticide., *Undergraduate Final Year Project Report*, Faculty of Bioengineering and Technology, Universiti Malaysia Kelantan, Malaysia.
- Novita, W, 2016, Uji Aktivitas Antibakteri Fraksi Daun Sirih (*Piper betle* L.) Terhadap Pertumbuhan Bakteri *Streptococcus mutans* Secara In Vitro. *Jurnal Program Kedokteran FKIK Jambi.* **1** : 1-5
- Nur Khoiriyah, Y., Murwaningsih, S., 2017. Kajian Ragam dan Periode Penyimpanan Kombinasi Air Rebusan Daun Sirih dan Kayu Siwak Terhadap Pertumbuhan *Streptococcus mutans*. *Biog. J. Ilm. Biol.* **5**: 70–77
- Odman, P.A, 1992 , The Effectiveness of An Enzyme Containing Dental Cleaner, *Quintessence International*, **23(3)** : 187-90
- Pangesti, R.D., Cahyono, E., Kusumo, E., 2017. Perbandingan Daya Antibakteri Ekstrak dan Minyak Piper betle L. terhadap Bakteri *Streptococcus*

- mutans. Indones. J. Chem. Sci.* **6**: 270–278.
- Patel, J., Kevin, G., Patel, A., Raval, M., Sheth, N., 2011, Design and development of a self-nanoemulsifying drug delivery system for telmisartan for oral drug delivery. *Int. J. Pharm. Investig.* **1**: 112
- Pereira-Cenci, T., Deng, D.M., Kraneveld, E.A., Manders, E.M.M., Del Bel Cury, A.A., ten Cate, J.M., Crielaard, W., 2008. The effect of *Streptococcus mutans* and *Candida glabrata* on *Candida albicans* biofilms formed on different surfaces. *Arch. Oral Biol.* **53**: 755–764.
- Phillips, D.M., 2019, *Streptococcus mutans*, <https://www.britannica.com/science/Streptococcus-mutans>, 29 Oktober 2019.
- Pradhan, D., Biomade, I., Pradhan, D., 2013. Journal of Pharmacognosy and Phytochemistry Golden Heart of the Nature: Piper betle L. *J. Pharmacogn. Phytochem.* **1**: 147–167.
- Pratiwi, S.T., 2008, *Mikrobiologi Farmasi*, Erlangga, Jakarta.
- Pratiwi, L., 2019. Assessment of Self-Nanoemulsifying Drug Delivery System (SNEDDS) of Ethyl Acetate Fraction from Mangosteen (*Garcinia mangostana* L.) Peels to *Escherichia coli*, *Pseudomonas aeruginosa*, and *Proteus mirabilis*. *Maj. Obat Tradis.* **24**: 189.
- Putri, H., Herijulianti, E., Nurjanah, N., 2013, *Ilmu Pencegahan Penyakit Jaringan Keras dan Jaringan Pendukung Gigi*, EGC, Jakarta.
- Pusat Data dan Informasi Kesehatan Republik Indonesia, 2014, *Situasi Kesehatan Gigi dan Mulut*, Kementerian Kesehatan Republik Indonesia, Jakarta.
- Power, J.M., and Sakaguchi, R.I., 2006, *Craig's Restorative Dental Material*, Ed. 12, 164-167, C.V. Mosby Co, Toronto.
- Rhee, K.Y., Gardiner, D.F., 2004. Clinical Relevance of Bacteriostatic versus Bactericidal Activity in the Treatment of Gram-Positive Bacterial Infections. *Clin. Infect. Dis.* **39**: 755–756.
- Rieuwpassa, I.E., Hamrun, N., Lukman, S.R., S, R.Y., Ramadhani, S., 2013. Ekstrak buah kaktus pir berduri menghambat pertumbuhan *Staphylococcus aureus*, *Streptococcus mutans*, dan *Candida albicans* Extract of cactus prickly pear inhibits the growing of *Staphylococcus aureus*, *Streptococcus mutans*, and *Candida albicans*. *J. Dentomaxillofacial Sci.* **12**: 139.
- Ritonga, N., 2005, Plak Gigi, *Skripsi*, Fakultas Kedokteran Gigi, Universitas Sumatera Utara.
- Rivai, H., Nanda, P.E., Fadhilah, H., 2014, PEMBUATAN DAN KARAKTERISASI EKSTRAK KERING DAUN SIRIH HIJAU (*Piper betle* L.), *S. J. Farm. Higea* **6**: 133–144.
- Roeslan, B. O., 2002, *Imunologi Oral: Kelainan di Dalam Rongga Mulut* Edisi 1, Balai Penerbit Fakultas Kedokteran Universitas Indonesia, Jakarta.
- Rollando, R., Susilo, Y., Prasetyo, A., Sitepu, R., 2019. UJI ANTIMIKROBA MINYAK ATSIRI MASOYI (*Massoia aromatica*) TERHADAP BAKTERI *Streptococcus mutans*. *Majalah Farmasi dan Farmakologi* **23(2)**:52-57
- Rowe, R.C., Sheskey, P.J., dan Quinn, M.F., 2009, *Handbook of Pharmaceutical*

- Excipients*, 6th ed., Pharmaceutical Press, London.
- Santosa, D., 2020, Wawancara atau komunikasi pribadi dengan penguji, 8 Januari 2020.
- Sari, R., Pratiwi, L., Apridamayanti, P., 2016, Efektivitas SNEDDS Ekstrak Kulit Manggis Terhadap Bakteri *P. Mirabilis* dan *S. epidermidis* yang terdapat pada ulkus diabetik, *Pharm. Sci. Res.*, **3(3)** : 130-138.
- Setiaji, B., & Prayugo, A., 2006, *Membuat VCO Berkualitas Tinggi*, Penebar Swadaya, Jakarta.
- Scwalbe, R., Moore, L.S., Goodwin, A.C., 2007, *Antimicrobial Susceptibility Testing Protocols*, CRC Press, United States Of America.
- Shah, S.K., Garg, G., Jhade, D., Patel, N., 2016. Piper betle: Phytochemical, pharmacological and nutritional value in health management. *Int. J. Pharm. Sci. Rev. Res.* **38**: 181–189.
- Shakeel, F., Baboota, S., Ahuja, A., Ali, J., Faisal, M.S., Shafiq, S., 2008. Stability evaluation of celecoxib nanoemulsion containing Tween 80 Abstract : **32**: 4–9.
- Sharma, S., Khan, I.A., Ali, I., Ali, F., Kumar, M., Kumar, A., Johri, R.K., Abdullah, S.T., Bani, S., Pandey, A., Suri, K.A., Gupta, B.D., Satti, N.K., Dutt, P., Qazi, G.N., 2009, Evaluation of the antimicrobial, antioxidant, and anti-inflammatory activities of hydroxychavicol for its potential use as an oral care agent. *Antimicrob. Agents Chemother.* **53**: 216–222.
- Standard of asean herbal medicine, 1993, Volume 1, ASEAN Countries, Jakarta, Indonesia.
- Sugumar, S., Mukherjee, A., Chandrasekaran, N., 2015. Nanoemulsion formation and characterization by spontaneous emulsification: Investigation of its antibacterial effects on *Listeria monocytogenes*. *Asian J. Pharm.* **9**: 23–28.
- Sumarya, I.M., Adiputra, N., Manuaba, P., Sukrama, D., 2016. Betel Leaf Extract (*Piper betle* L.) Antihyperuricemia Effect Decreases Oxidative Stress by Reducing the Level of MDA and Increase Blood SOD Levels of Hyperuricemia Wistar Rats (*Rattus norvegicus*). *Bali Med. J.* **5**: 78.
- Sumawinata, N., & Yuwono, L. (2003). *Senarai istilah kedokteran gigi*, EGC, Jakarta.
- Sundararajan, B., Moola, A.K., Vivek, K., Kumari, B.D.R., 2018. Formulation of nanoemulsion from leaves essential oil of *Ocimum basilicum* L. and its antibacterial, antioxidant and larvicidal activities (*Culex quinquefasciatus*). *Microb. Pathog.* **125**: 475–485
- Supartinah, A.I., Sudarso, I.S.R., Mahendra, P.K.W., Argani, E., Titien, I., Ramayanti, S., 2015, Pengaruh konsentrasi ekstrak etanol buah naga merah (*Hylocereus polyrhizus*) dan buah naga putih (*Hylocereus undatus*) terhadap daya hambat pertumbuhan dan perlekatan bakteri *Streptococcus mutans* isolasi rongga mulut anak Kajian in vitro, *Tesis*, Fakultas Kedokteran Gigi, Yogyakarta.

- Susanti, N.M.P., Dewi, L.P.M.K., Manurung, H.S., Wirasuta, I.M.A.G., 2017. IDENTIFICATION OF PHENOL COMPOUND IN GREEN *Piper betle* LEAF ETHANOL EXTRACT BY THE TLC-SPECTROPHOTODENSITOMETRY METHOD. *J. Metamorf.* **4**: 108–113.
- Suwondo, S., 2007, Skrining Tumbuhan Obat yang Mempunyai Aktivitas Antibakteri Penyebab Karies Gigi dan Pembentukan Plak, *Jurnal Bahan Alam Indonesia*, 2007, 6 (2) : 65-69
- Syah, A.N.A., 2005, *Virgin Coconut Oil : Minyak Penakluk Aneka Penyakit*, AgroMedia, Jakarta.
- Syukri, Y., Martien, R., Lukitaningsih, E., Nugroho, A.E., 2018. Novel Self-Nano Emulsifying Drug Delivery System (SNEDDS) of andrographolide isolated from *Andrographis paniculata* Nees: Characterization, in-vitro and in-vivo assessment. *J. Drug Deliv. Sci. Technol.* **47**: 514–520.
- Tadros, T.F., 2005, *Applied Surfactants*, Wiley – VCH Verlag GmbH & Co. KGaA, Weinheim.
- Talumewo, M., Mintjelungan, C., Wowor, M., 2015. Beralkohol Dan Non Alkohol Dalam Menurunkan Akumulasi Plak **4**: 1–8.
- Ujilestari, T., Martien, R., Ariyadi, B., Dono, N.D., Zuprizal, 2019. Antibacterial effects of essential oils of *Cymbopogon citratus* and *Amomum compactum* under self-nanoemulsifying drug delivery system (SNEDDS). *IOP Conf. Ser. Earth Environ. Sci.* **387**
- Valgas, C., De Souza, S.M., Smânia, E.F.A., Smânia, A., 2007. Screening methods to determine antibacterial activity of natural products. *Brazilian J. Microbiol.* **38**: 369–380.
- Van Steenis, 1997, *Flora Untuk Sekolah di Indonesia*, diterjemahkan oleh Moeso, S., PT Pradaya Paramita, Jakarta.
- Victor, A.C., Elaine, de F.F., Elaine, de F.F., Maria, L.S., Rondinely, L.S., Queli, C.F., Francisco, E.A.C.J., 2019. Inhibition of *Streptococcus mutans* (ATCC 25175) biofilm formation on eugenol-impregnated surgical sutures. *African J. Microbiol. Res.* **13**: 168–175.
- Voigt, 1994, Buku Pelajaran Teknologi Farmasi, Edisi V, Gadjah Mada University Press, Yogyakarta.
- Wardhani, F.T., 2012. *Jumlah Koloni Streptococcus Mutans Pada Plak Gigi Anak Sebelum Dan Setelah Minum Minuman Probiotik*, Tesis, Fakultas Kedokteran Gigi Universitas Indonesia, Jakarta.
- Widiyastuti, Y., Haryanti, S., Subositi, D., 2013. KARAKTERISASI MORFOLOGI DAN KANDUNGAN MINYAK ATSIRI BEBERAPA JENIS SIRIH (*Piper* sp.) Morphological characterization and volatile oil contain of various (*Piper* sp.). *J. Tumbuh. Obat Indones.* **6**: 86–93.
- Wuru, A.F., Lau, A.H.S., 2018, IDENTIFIKASI FITOKIMIA EKSTRAK METANOL DAUN PALIASA (*Melochiaumbellata* (Houtt) stapf) DARI DESA RENGGARASI DENGAN METODE

KROMATOGRAFI LAPIS TIPIS (KLT), *Jurnal Farmasi Sandi Karsa* , **4(7)** : 29-33.

Xiao, J., Zuo, Y.L., Liu, Y., Li, J.Y., Hao, Y.Q., Zhou, X.D., 2007. Effects of *Nidus Vespae* extract and chemical fractions on glucosyltransferases, adherence and biofilm formation of *Streptococcus mutans*. *Arch. Oral Biol.* **52**: 869–875

Yildirim, S.T., Oztop, M.H., Soyer, Y., 2017. Cinnamon oil nanoemulsions by spontaneous emulsification: Formulation, characterization and antimicrobial activity. *LWT - Food Sci. Technol.* **84**: 122–128.