

DAFTAR PUSTAKA

- Affandi, N.D.R., Aruan, R.T., Iriany, 2013, Produksi Biodiesel Dari Lemak Sapi Dengan Proses Transesterifikasi Dengan Katalis Basa NaOH, Jurnal Teknik Kimia USU, Vol.2, No.1.
- Arisma, M.B., 2011, Obesitas, diabetes melitus & dislipidemia: Konsep, teori, dan penanganan aplikatif. Jakarta.
- Aditiyarini, D., and Wahyuningsih., T.D., 2015, Acetylation of Eugenol, Isoeugenol and Vanillin by Sonochemistry Method Research Centre for Biotechnology, Gadjah Mada University, Yogyakarta, Indonesia.
- Ahmed, W., 2016, Monitoring antioxidant and antityrosinase activity of clove aromatic flower buds, *Journal of Medicinal Plants Studies*, 4, 163-169.
- Bano, S., Qader, S. A. U., Aman, A., Syed, M. N., & Azhar, A. (2011). Purification and Characterization of Novel α -Amylase from *Bacillus subtilis* KIBGE HAS. *AAPS PharmSciTech*, 12(1), 255–261.
- Bi, X., Lim, J., dan Henry, C.J., 2017, Spices in the management of diabetes mellitus, *Food Chem.*, 217, 281-293.
- Baynest, H.W., 2015, Classification, pathophysiology, diagnosis and management of diabetes mellitus, *J. Diabetes Metab.*, 6 (5), 1-9.
- Bendre, R. S., Rajput, J. D., Bagul, S. D., dan Karandikar, P. S., 2016, Natural Products Chemistry & Research Outlooks on Medicinal Properties of Eugenol and its Synthetic Derivatives, *Nat. Prod. Chem. Res.*, 4 (3), 1-6.
- Chaieb, K., Hajlaoui, H., Zmantar, T., Kahla-Nakbi, A.B., Rouabhia, M., Mahdouani, K., Bakhrouf, A., 2007, The chemical composition and biological activity of clove essential oil, *Eugenia caryophyllata* (Syzigium aromaticum L. Myrtaceae): a short review. *Phytotherapy Research*, 21, 501-506.
- Dahham, S.S., Tabana, Y.M., Iqbal, M.A., Ahamed, M.B.K., Ezzat, M.O., Majid, A.S.A., and Majid, A.M.S.A., 2015, The anticancer, antioxidant and

- antimicrobial properties of the sesquiterpene β -Caryophyllene from the essential oil of *Aquilaria crassna*. *Molecules*, 20, 11808-11829.
- deMoraes, S.M., Vila-nova, N. S., Bevilaqua, C.M., Rondon, F.C., Lobo, C.H., Moura, A.D.A.N., Sales, A.D., Rodrigus, A.P.R., Figueiredo, J.R., Campello, C.C., Wilson, M.E., dan Franco, H., 2014, *Bioorganic & Medicinal Chemistry Thymol and eugenol derivatives as potential antileishmanial agents*, *Bioorg. Med. Chem.*, 22 (21), 6250-6255.
- da Silva, F.F.M., Monte, F.J.Q., de Lemos, T.L.G., do Nascimento, P.G.G., de Medeiros Costa, A.K., and de Paiva, L.M.M., 2018, *Eugenol derivatives: synthesis, characterization, and evaluation of antibacterial and antioxidant activities*, *Chem. Cent. J.*, 12, 1–9.
- Dipiro, J.T., Wells, B.G., Talbert, R.L., Yee, G.C., Matzke, G.R., Posey, L.M., 2005, *Pharmacotherapy*, 6th Edition, Appleton ang Lange, New York. 1-13
- Ettxeberria, U., de la Garza, A. L., Campión, J., Martínez, J. A., & Milagro, F. I., 2012, *Antidiabetic effects of natural plant extracts via inhibition of carbohydrate hydrolysis enzymes with emphasis on pancreatic alpha amylase*. *Expert Opinion on Therapeutic Targets*, 16(3), 269–297.
- Fujisawa, T., Ikegami, H., Inoue, K., Kawabata, Y., dan Ogihara, T., 2005, *Effect of two α -glucosidase inhibitors , voglibose and acarbose , on postprandial hyperglycemia correlates with subjective abdominal symptoms*, *Metab. Clin. Exp.*, 54, 387-390.
- Grzelak-Błaszczuk K., Czarnecki A., Klewicki R., 2020, *The effect of osmotic dehydration on the polyphenols content in onion*. *Acta Sci.Pol. Technol. Aliment.* 19 (1), 37-45.
- Gulçin, I., Taslimi, P., Aygun, A., Sadeghian, N., Bastem, E., Kufrevioglu, O.I., Turkan, F., dan Sen, F., 2018, *Antidiabetic and antiparasitic potentials: Inhibition effects of some natural antioxidant compounds on α -glycoside*,

- α -amylase and human glutathione S-transferase enzymes, *Int. J. Biol. Macromol.*, 119, 741-746.
- Guo, Y., & Bruno, R. S., 2015, Endogenous and exogenous mediators of quercetin bioavailability. *The Journal of Nutritional Biochemistry*, 26(3), 201–210.
- Guzmán, D., Ramis, X., Fernández-francos, X., De, S., dan Serra, A., 2018, Preparation of new biobased coatings from a triglycidyl eugenol derivative through thiol-epoxy click reaction, *Pro. Org. Coat.*, 114, 259-267.
- Guzmán, D., Ramis, X., Fernandez-Francos, X., Flor, S.D., dan Serra, A., 2017, New bio-based materials obtained by thiol-ene/thiol-epoxy dual curing click procedures from eugenol derivatives, *Eur. Poly. J.*, 530-544.
- Hidalgo, M.E., Rossa, C.D., Carrasco, H., Cardona W., Gallardo C., Espinoza, L., 2009, Antioxidant Capacity of Eugenol Derivatives, *Quim. Nova*, 32: 1467-1470.
- IDF Diabetes Atlas, 2019, 9th ed, Brussels, Belgium: International Diabetes Federation, Available from <http://www.diabetesatlas.org>.
- Indrianingsih, A. W., Tachibana, S., Dewi, R. T., dan Itoh, K., 2015, Antioxidant and α -glucosidase inhibitor activities of natural compounds isolated from *Quercus gilva* Blume leaves, *Asian Pac. J. Trop. Biomed.*, 5 (9), 748–755.
- Jadhav, R., dan Puchchakayala, G., 2012, Hypoglycemic and antidiabetic activity of flavonoids: boswellic acid, ellagic acid, quercetin, rutin on streptozotocinnicotinamide induced type 2 diabetic rats, *Int. J. Pharm. Pharm. Sci.*, 4 (2), 2-7.
- Kalita, Pankaj, Tanmay Jyoti Deka, Samar Das, Dudul Das, Rupam Kataki, 2018, Design, Development and Performance Evaluation of A Fluidized Bed Paddy Dryer. *Journal of Energy and Enviromental Sustainability*. Vol. 6. Hal: 18-23.

- Lancaster, M., 2002, "Green Chemistry: An Introductory Text", The Royal Society of Chemistry, Cambridge. Dosis
- Liang, R., Yuan, H., Xi, G., and Zhou, Q., 2009, Synthesis of Wheat Straw-GPoly (Acrylic Acid) Superabsorbent Composites and Release of Urea from it, *Carbohydr. Polym.*, 2(77), 181-187.
- Listyo, A., B., Kusriani, D., dan Fachriyah, E., 2018, Isolasi Asam Ferulat Dari Daun Mindi (*Melia Azedarach L.*) Dan Uji Aktivitas Antioksidan, *JKPK (JURNAL KIMIA DAN PENDIDIKAN KIMIA)*, Vol 3, No 1, Hal. 30-37.
- Blum, M., Demierre, A., Grant, D.M., Heim, M., UA Meyer10.1073/pnas.88.12.5237Proceedings of the National Academy of Sciences
- Budavari, S., 2001, *Merk Index : An Encyclopedia of Chemicals, Drugs, and Biological*, 13th ed., Merck & Co., Inc, USA, 239, 612.
- Mardianis, Y., Anwar, C., dan Haryadi, W., 2017, Synthesis of Curcumin Analogues Monoketone from Cinnamaldehyde and Their Inhibition Assay Against Alpha-Glucosidase Enzyme, *Mat. Sci. For.*, 901, 110-117.
- Martins, R.M., Farias, D. A., Nedel, F., Pereira, C. M. P. de, Lencina, C., dan Guerra, R., 2016, Antimicrobial and cytotoxic evaluation of eugenol derivatives, *Med. Chem. Res.*, 2360-2367.
- Topal, F., Gulcin, I., Dastan, A., dan Guney, M., 2017, Novel eugenol derivatives: Potent acetylcholinesterase and carbonic anhydrase inhibitors, *Int. J. Biol. Macromol.*, 94, 845-851.
- Mastelic, J., Jerkovic, I., Blazevic, I., Poljak-Blazi, M., Borovic, S., Ivancic-Bace, I., Smrecki, V., Zarkovic, N., Brcic-Kostic, K., Vikic-Topic, D., dan Muller, N., 2008, Comparative study on the antioxidant and biological activities of carvacol, thymol, and eugenol derivatives, *J. Agric. Food Chem.*, 56, 3989-3996.
- Modjinou, T., Versace, D., Abbad-Andaloussi, S., Langlois, V., dan Renard Estelle, 2017, Antibacterial and antioxidant photoinitiated epoxy

- conetworks of resorcinol and eugenol derivatives, *Mater. Today Commun.*, 1928.
- Mnafgui, K., Kaanich, F., Derbali, A., Hamden, K., Derbali, F., Slama, S., Allouche, N., dan Elfeki, A., 2013, Inhibition of key enzymes related to diabetes and hypertension by eugenol in vitro and in alloxan-induced diabetic rats, *Arch. Physiol. Biochem.*, 1-9.
- .Nam, H., and Kim, M.M., 2013, Eugenol with antioxidant activity inhibits MMP9 related to metastasis in human fibrosarcoma cells. *Food Chem. Toxicol.* 55, 106–11
- Nampoothiri, S.V., Parthapan, A., Cherian, L.O., Raghu, K.G., Venugovalan, V.V., and Sundaresan, A., 2011, In Vitro Antioxydant and Inhibitory Potential of Terminalia Ballerica and Emblica Offcinalis Fruits Against Oxidation and Enzymes Linked to Type 2 Diabetes, *Food Chem. Toxicol.*, 49, 125-131.
- Oboh, G., Ademosun, A. O., Ayeni, P. O., Omojokun, O. S., & Bello, F., 2014, *Comparative effect of quercetin and rutin on α -amylase, α -glucosidase, and some pro-oxidant-induced lipid peroxidation in rat pancreas. Comparative Clinical Pathology*, 24(5), 1103–1110.
- Oboh, G., Akinbola, I.A., Ademosun, A.O., Sanni, D.M., Odubanjo, O.V., Olasehinde, T.A., dan Oyeleye, S., 2015, Essential oil from clove bud (*Eugenia aromatica* Kuntze) inhibit key enzymes relevant to the management of type-2 diabetes and some pro-oxidant induced lipid peroxidation in rats pancreas in vitro, *J. Oleo. Sci.*, 64 (7), 775-782.
- Okutan, L., Kongstad, K.T., Jager, A.K., dan Staerk, D., 2014, High-Resolution α -amylase assay combined with High-Performance Liquid ChromatographySolid-Phase Extraction-Nuclear Magnetik Resonance Spectroscopy for expedited identification of α -amylase inhibitors: Proof of concept and α amylase inhibitor in cinnamon, *J. Agric. Food. Chem.*, 62.

- Ozougwu, J.C., Obimba, K.C., Belonwu, C.D., dan Unakalamba, C.B., 2013, The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus, *J. Physiol. Pathophysiol.*, 4 (4), 46-57.
- Prabhakar PK and Doble M., 2011, Interaction of Phytochemicals with Hypoglycemic Drugs on Glucose Uptake in L6 Myotubes. *Phytomedicine*; 18(4): 285-291.
- Prabhakar, P.K., Prasad, R., Ali, S., and Doble, M., 2013, Synergistic interaction of ferulic acid with commercial hypoglycemic drugs in streptozotocin induced diabetic rats, *Phytomedicine.*, 20, 488-494.
- Rapp C. (2007) Clove oil as effective as topical anesthetic. *HerbalGram*, 74, 26.
- Reddy, A., Primasari, dan Widiarti N., 2008, Penerapan Teknologi Pemurnian Minyak Cengkeh Sebagai Upaya Peningkatan Kesejahteraan Pengrajin di Kecamatan Ungaran Barat, *J. Med. Plants Stud.*, 4, 112-121
- Rivera-Mancia, S., Trujillo, J., dan Chaverri, J.P., 2018, Utility of Curcumin for the Treatment of Diabetes, Mellitus: Evidence from Preclinical and Clinical Studies, *J. Nutr. Inter. Met.*, 14, 29-41.
- Sun, L., Warren, F.J., dan Gidley, M.J., 2019, Natural products for glycaemic control: Polyphenols as inhibitors of alpha-amylase, *Trends Food Sci. Tech.*, 91, 262-273.
- Suryanto, E., dan Anwar, C., 2008, Sintesis antioksidan 4,6-dialil-2-metoksifenol dari alil eugenol melalui penataan ulang Claisen, *Chem. Prog.* 1 (1), 1-8.
- Tadera, K., Minami, Y., Takamatsu, K., dan Matsuoka, T., 2006, Inhibition of α -glucosidase and α -amylase by flavonoids, *J. Nut. Sci. Vitaminol*, 52, 149-153.
- Wright, E., Bacon, S., Glass, L.C., 2006, Oxidative stress in type 2 diabetes ; the role of fasting and postprandial glycemia. *Int J Clin Pract*; 60 : 308-314
- Xiao, Z., Storms, R., and Tsang, A., 2006, A Quantitative Starch-Iodine Method for Measuring Alpha-Amylase and Glucoamylase Activities, *Anal. Biochem.*, 351(1), 146-148.

- Xie, Y., Huang, Q., Wang, Z., Cao, H., dan Zhang, D., 2017, Structure-activity relationships of cinnamaldehyde and eugenol derivatives against plant pathogenic fungi, *Ind. Crops Prod.*, 97, 388-394.
- Xu, Z., Hua, N., Godber, J.S., 2001, Antioxidant Activity of Tochoferols, Tocho trienols, and Gamma Oryzanol Components from Rice Bran Againsts Cholesterol Oxidation Accelerated by 2,2-azobis(2-methylpropionamidine) dihydrochloride, *Journal of Agricultural and Food Chemistry*, 49, 2077-2081
- Zduńska, K., Dana, A., Kolodziejczak, A., & Rotsztein, H., 2018, *Antioxidant Properties of Ferulic Acid and Its Possible Application. Skin Pharmacology and Physiology*, 332–336.