UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Ahmad, F. B., dan Holdsworth, D. K. 1995. Traditional medicinal plants of Sabah, Malaysia part III. The Rungus people of Kudat. *International Journal of Pharmacology*. 33 : 262–264.

Ahn, J., Grün, I. U., dan Fernando, L. N. 2002. Antioxidant properties of natural plant extracts containing polyphenolic compounds in cooked ground beef. *Journal of Food Science*. 67 (4) : 1364–1369.

Aminabhavi, T. M., Balundgi, R. H., dan Cassidy, P. E. 2008. A review on biodegradable plastics. *Polymer-Plastics Technology and Engineering*. 29 : 235-262.

Anonim, 2005. Glutaraldehyde. URL: https://pubchem.ncbi.nlm.nih.gov/compound/glutaraldehyde. Diakses tanggal 10 September 2017 pukul 19.02 WIB.

Antolovich, M., Prenzler, P. D., Patsalides, E., McDonald, S., dan Robards, K. 2002. Methods for testing antioxidant activity. *Analyst*. 127 : 183–198.

Appendini, P., dan Hotchkiss, J. H. 2002. Review of antimicrobial food packaging. *Innovative Food Science and Emerging Technologies*. 3 (2) : 113-126.

Apu, A.S., Muhit, M.A., Tareq, S.M., Pathan, A.H., Jamaluddin, A.T.M., dan Ahmed, M. 2010. Antimicrobial activity and brine shrimp lethality bioassay of the leaves extract of *Dillenia indica* Linn. *Journal of Young Pharmacist*. 2 (1) : 50–53.

Armania, N., Yazan, L. S., Musa, S. N., Ismail, I. S., Foo, J. B., Chan, K. W., Noreen, H.,Hisyam, A. H., Zulfahmi, S., dan Ismail, M. 2013. *Dillenia suffruticosa* exhibited antioxidant and cytotoxic activity through induction of apoptosis and G2/M cell cycle arrest. *Journal of Ethnopharmacology*. 146 : 525-535.

Ayana, B., dan Turhan, K. N. 2009. Use of antimicrobial methylcellulose films to control *Staphylococcus aureus* during storage of kasar cheese. *Packaging Technology and Science*. 22 : 461–469.

Baird, R. J. 1986. Industrial Plastik. New York : The Goodheart – Willcox Company. Inc.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Baker, C. A. 1984. Methylcellulose and sodium carboxymethylcellulose: An evaluation for use in paper conservation through accelerated aging. *Studies in Conservation*. (29) : 55-59.

Bañón, S., Díaz, P., Rodríguez, M., Garrido, M.D., dan Price, A. 2007. Ascorbate, green tea and grape seed extracts increase the shelf life of low sulphite beef patties. *Meat Science*. 77 : 626–633.

Bhakuni, D.S., Dhar, M.L., Dhar, M.M., Dhawan, B.N., dan Mehrotra, B.N. 1968. Screening of Indian plants for biological activity Part II. *Indian Journal of Experimental Biology* 7 : 250–262.

Biquet, B., dan Labuza, T. P. 1988. Evaluation of the moisture permeability characteristic of chocolate films as an edible moisture barrier. *Journal of Food Science*. 53 (4) : 989–998.

Brand-Williams, W., Cuvelier, M. E., dan Berset, C. 1995. Use of a free radical method to evaluate antioxidant activity. *LWT-Food Science and Technology*. 29 : 25-30.

Burton, G.W., dan Traber, M.G. 1990. Vitamin E: antioxidant activity, biokinetics, and bioavailability. *Annual Review of Nutrition*. 10 : 357–382.

Carocho, M., dan Ferreira, I. C. F. R. 2013. A review on antioxidants, prooxidants and related controversy: Natural and synthetic compounds, screening and analysis methodologies and future perspectives. *Food and Chemical Toxicology*. 51 : 15–25.

Chevillard, C., dan Axelos, M. A. V. 1997. Phase separation of aqueous solution of methylcellulose. *Colloid and Polymer Science*. 275 : 537-545.

Chouliara, E., Karatapanis, A., Savvaidis, I. N., dan Kontominas, M. G. 2007. Combined effect of oregano essential oil and modified atmosphere packaging on shelf-life extension of fresh chicken breast meat, stored at 4 °C. *Food Microbiology*. 24 : 607–617.

Contini, C., Álvarez, R., O'Sullivan, M., Dowling, D.P., Óg Gargan, S., dan Monahan, F.J. 2014. Effect of an active packaging with citrus extract on lipid oxidation and sensory quality of cooked turkey meat. *Meat Science*. 96 : 1171-1176.

Cooper, T. A. 2013. Developments in bioplastic materials for packaging food, beverages and other fast-moving consumer goods. Farmer, N. (Ed.). *Trends pack food, beverages and other fast-moving consumer goods* (FMCG). Halaman 108-152. United Kingdom : Woodhead Publishing.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Cowd, M.A. 1991. Kimia Polimer. Bandung : Penerbit ITB.

Darmanyan, A. P., Gregory, D. D., Guo, Y., Jenks, W. S., Burel, L., Eloy, D., dan Jardon, P. 1998. Quenching of singlet oxygen by oxygen- and sulfur-centered radicals: evidence for energy transfer to peroxyl radicals in solution. *Journal of American Chemical Society*. 120 : 396–403.

De-Boer, H. J., Lamxay, V., dan Bjork, L. 2012. Comparing medicinal plant knowledge using similarity indices: A case of the Brou, Saek and Kry in Lao PDR. *Journal of Ethnopharmacology*. 141 : 481-500.

Evan, A. P., dan Gardner, K. D. 1979. Nephron obstruction in nordihydroguaiaretic acidinduced renal cystic disease. *Kidney International*. 15 : 7–19.

Ghimire, K., dan Bastakoti, R.R. 2009. Ethnomedicinal knowledge and healthcare practices among the Tharus of Nawalparasi district in central Nepal. *Forest Ecology and Management*. 257 : 2066-2072.

Gontard, N., Guilbert, S., dan Cuq, J. 1993. Water and glycerol as plasticizers affect mechanical and water vapor barrier properties of an edible wheat gluten film. *Journal of Food Science*. 1 (58) : 206-211.

Grosvenor, P. W., Gothard, P. K., McWilliam, N.C., Supriono, A., dan Gray, D. O. 1995. Medicinal plants from Riau Province, Sumatra, Indonesia. Part 1: Uses. *Journal of Ethnopharmacology*. 45 : 75-95.

Guilbert, S., dan Biquet, B. 1996. Edible films and coatings. G. Bureau, dan J. L. Multon (Ed.). *Food Packaging Technology*. Volume 1. Halaman 528. New York : VCH Publishers.

Halliwell, B., 1990. How to characterize a biological antioxidant. *Free Radical Research Communications*. 9 : 1–32.

Halliwell, B., dan Gutteridge, J.M., 1995. The definition and measurement of antioxidants in biological systems. *Free Radical Biology and Medicine*. 18 : 125–126.

Halliwell, B., 2007. Biochemistry of oxidative stress. *Biochemical Society Transactions*. 35 : 1147–1150.

Han, J. H. 2005. *Innovations in Food Packaging*. Elsevier Ltd.

Handayani, R dan Mastuti, T.S. 2014. Senyawa Penyusun Ekstrak N-Heksana Dari Daun Pisang Batu, Kepok dan Ambon Hasil Distilasi Air. Prosiding Seminar Nasional Bioteknologi. Surabaya.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Hanum, F., dan Hamzah, N. 1999. The use of medicinal plant species by the Temuan Tribe of Ayer Hitam Forest, Selangor, Peninsular Malaysia. *Pertanika Journal of Tropical Agricultural Science*. 22 : 85-94.

Harborne, J. B. 1987. Metode fitokimia : Penuntun cara modern menganalisis tumbuhan. Bandung : Institut Teknologi Bandung. (diterjemahkan oleh Kosasih Padmawinata dan Iwang Soediro).

Hauser, C., Penaloza, A., Rodriguez, F., Guarda, A., dan Galotto, M. J. 2014. Promising antimicrobial and antioxidant extracts of murta leaves (*Ugni molinae* Turcz): shelf-life extension and food safety. *Food Packaging and Shelf Life*. 1 : 77-85.

Hauser, C., Penaloza, A., Guarda, A., Galotto, M. J., Bruna, J. E., dan Rodríguez, F. J. 2015. Development of an active packaging film based on a methylcellulose coating containing murta (*Ugni molinae* Turcz) leaf extract. *Food Bioprocess Technology*.

Heim, K. E., Tagliaferro, A. R., dan Bobilya, D. J. 2002. Flavonoid antioxidants: chemistry, metabolism and structure–activity relationships. *Journal of Nutritional Biochemistry*. 13 : 572–584.

Hernandez-Munoz, P., Villalobos, R., dan Chiralt, A. 2004. Effect of cross-linking using aldehydes on properties of glutenin-rich films. *Food Hydrocolloids*. 18 : 403–411.

Hirrien, M., Desbrières, J., dan Rinaudo, M. 1996. Physical properties of methylcelluloses in relation with the conditions for cellulose modification. *Carbohydrate Polymers*. 31 : 243-253.

Holdsworth, D. 1987. Medicinal plants of the Central Province of Papua New Guinea, Part IV. *International Journal of Crude Drug Research*. 25 : 231-235.

Huang, D., Ou, B., dan Prior, R. L. 2005. The chemistry behind antioxidant capacity assays. *Journal of Agricultural and Food Chemistry*. 53 : 1841–1856.

Johnny, L., Yusuf, U. K., dan Nulit, R. 2010. The effect of herbal plant extracts on the growth and sporulation of *Colletotrichum gloeosporioides*. *Journal of Applied Biosciences*. 34 : 2218–2224.

Joung, T., Nihei, K., dan Kubo, I. 2004. Lipoxygenase inhibitory activity of octyl gallate. *Journal of Agricultural and Food Chemistry*. 52 : 3177–3181.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Kamper, S. L., dan Fennema, O. 1984. Water vapor permeability of edible bilayer films. *Journal of Food Science*. 49 : 1478–1481.

Kancheva, V. D. 2009. Phenolic antioxidants-radical-scavenging and chainbreaking activity: a comparative study. *European Journal of Lipid Science and Technology*. 111 : 1072–1089.

Kaur, N., Kishore, L., dan Singh, R. 2016. Antidiabetic effect of new chromane isolated from *Dillenia indica* L. leaves in streptozotocin induced diabetic rats. *Journal of Functional Foods*. 22 : 547–555.

Kayano, S., Kikuzaki, H., Fukutsuka, N., Mitani, T., dan Nakatani, N. 2002. Antioxidant activity of prune (*Prunus domestica* L.) constituents and a new synergist. *Journal of Agricultural and Food Chemistry*. 50 (13) : 3708-3712.

Koswara. 2006. Teknologi Modifikasi Pati. Ebook Pangan.

Krimmel, B., Swoboda, F., Solar, S., dan Reznicek, G. 2010. OH-radical induced degradation of hydroxybenzoic- and hydroxycinnamic acids and formation of aromatic products – a gamma radiolysis study. *Radiation Physics and Chemistry*. 79 : 1247–1254.

Kumar, S., Kumar, V., dan Prakash, O. 2011. Microscopic evaluation and physiochemical analysis of *Dillenia indica* leaf. *Asian Pacific Journal of Tropical Biomedicine*. 337 – 340.

Lai, H. M., G. W. Padua dan L. S. Wei. 1997. Properties and microsructure of zein sheets plastisized with palmitic and stearic acids. *Cereal Chemistry Journal*. 74 (1) : 83-90.

Lim, T.K. 2012. Edible Medicinal And Non-Medicinal Plants. Fruits. *Springer Science+Business Media B.V.* (2) : 410 – 415.

Lopez de Dicastillo, C., Jorda, M., Catala, R., Gavara, R., dan Hernandez, P. 2011. Development of active polyvinyl alcohol/b-cyclodextrin composites to scavenge undesirable food components. *Journal of Agricultural and Food Chemistry*. 59 : 11026-11033.

Lopez de Dicastillo, C., Rodriguez, F., Guarda, A., dan Galotto, M. J. 2016a. Antioxidant films based on cross-linked methyl cellulose and native Chilean berry for food packaging applications. *Carbohydrate Polymers*. 136 : 1052–1060.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Lopez de Dicastillo, C., Bustos, F., Guarda, A., dan Galotto, M. J. 2016b. Cross-linked methyl cellulose films with murta fruit extract for antioxidant and antimicrobial active food packaging. *Food Hydrocolloids*. 60 : 335-344.

Lopez, P., Sanchez, C., Batlle, R., dan Nerin, C. 2007. Vapor-phase activities of cinnamon, thyme, and oregano essential oils and key constituents against foodborne microorganisms. *Journal of Agricultural and Food Chemistry*. 55 (11) : 4348–4356.

Madikizela, B., Aderogba, M.A., Finnie, J.F., dan Van Staden, J. 2014. Isolation and characterization of antimicrobial compounds from Terminalia phanerophlebia Engl. and Diels leaf extracts. *Journal of Ethnopharmacology*. 156 : 228–234.

McBride, N. T. M., Hogan, S. A., dan Kerry, J. P. 2007. Comparative addition of rosemary extract and additives on sensory and antioxidant properties of retail packaged beef. *International Journal of Food Science and Technology*. 42 : 1201–1207.

McClements, D. J, dan Decker, E. A. 2000. Lipid oxidation in oil-in-water emulsions: impact of molecular environment on chemical reactions in heterogeneous food systems. *Journal of Food Science*. 65 (8) : 1270-1282.

Mehta, S. K., dan Gowder, S. J. T. 2015. Members of antioxidant machinery and their functions. Basic principles and clinical significance of oxidative stress. Volume 1. Halaman 59–85. URL : http://www.intechopen.com/books/basic-principles-and-clinicalsignificance-of-oxidative-stress. Diakses tanggal 10 September 2017 pukul 19.08 WIB.

Migneault, I., Dartiguenave, C., Bertrand, M. J., dan Waldron, K.C. 2004. Glutaraldehyde: behavior in aqueous solution, reaction with proteins, and application to enzyme crosslinking. *BioTechniques*. 37 : 790-802.

Min, D. B., dan Boff, J. M., 2002. Chemistry and reaction of singlet oxygen in foods. *Comprehensive Reviews in Food Science and Food Safety*. 1 : 58–72.

Miyazaki, M., Hung, P. V., Maeda, T., dan Morita, N. 2006. Recent advances in application of modified starches for breadmaking. *Trends in Food Science and Technology*. 17 : 591-599.

Moon, J., dan Shibamoto, T. 2009. Antioxidant assays for plant and food components. *Journal of Agricultural and Food Chemistry*. 57 : 1655–1666.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Mukherjee, K.S. dan Badruddoza, S. 1981. Chemical constituents of *Dillenia indica* Linn. and *Vitex negundo* Linn. *Journal of Indian Chemical Society*. 58 : 97–98.

Muliawan, S.Y. 2008. Effect of *Dillenia suffruticosa* extract on dengue virus type 2 replication. *Universa Medicina*. 27 : 1–5.

Myers, A. W., Meyer, J. A., Rogers, C. E., Stannet, V., dan Szwarc, M. 1961. Studies in the gas and vapor permeability of plastic films and coated papers, the permeation of water vapor. *TAPPI*. 45–58.

Narayan, R. 1996. Biobased and Biodegradable Plastic. URL: http://www. plasticsindustry.org/files/events/pdfs/bio-narayan-061906.pdf. Diakses tanggal 13 September 2017 pukul 19.34 WIB.

Nasatto, P. L., Pignon, F., Silveira, J. L. M., Duarte, M. E. R., Noseda, M. D., dan Rinaudo, M. 2015. Methylcellulose, a cellulose derivative with original physical properties and extended applications. *Polymers*. 7 : 777-803.

Neldawati, Ratnawulan, dan Gusnedi. 2013. Analisis nilai absorbansi dalam penentuan kadar flavonoid untuk berbagai jenis daun tanaman obat. Pillar of Physics. (2) : 76-83.

Oxtoby, D. W., dan Gillis, H. P., Campion, A. 2003. Principles of Modern Chemistry (7th ed.). California : Thomson Brooks/Cole.

Paiva, S. A. R., dan Russell, R. M., 1999. β-Carotene and other carotenoids as antioxidants. *Journal of the American College of Nutrition*. 18 : 426–433.

Park, J. S., dan Ruckenstein, E. 2001. Viscoelastic properties of plasticized methylcellulose and chemically crosslinked methylcellulose. *Carbohydrate Polymers*. 46 : 373-381.

Pereira de Abreu, D. A., Paseiro Losada, P., Maroto, J., dan Cruz, J.M. 2010. Evaluation of the effectiveness of a new active packaging film containing natural antioxidants (from barley husk) that retard lipid damage in frozen Atlantic salmon (*Salmo salar L.*). *Food Research International.* 43 (5) : 1277–1282.

Pietta, P. 2000. Flavonoids as antioxidants. *Journal of Natural Products*. 63 : 1035–1042.

Pokorny´, J. 2007. Are natural antioxidants better – and safer – that synthetic antioxidants?. *European Journal of Lipid Science and Technology*. 109 : 629–642.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Pramesti, A. K. 2005. Identifikasi Fraksi Hasil Ekstraksi Daging Buah Matang Dillenia indica dalam Pelarut n-heksana. Fakultas Teknik. Universitas Indonesia. Depok.

Prasad, P. R. C., Reddy, C. S., dan Dutt, C. B. S. 2008. Folklore medicinal plants of North Andaman Islands, India. *Fitoterapia*. 79 : 458-464.

Prasetyaningrum, A., Rokhati, N., Kinasih, D. N., dan Wardhani, F. D. N. 2010. Karakterisasi *bioactive edible film* dari komposit alginat dan lilin lebah sebagai bahan pengemas makanan *biodegradable*. *Seminar rekayasa kimia dan proses*. 2 : ISSN 1411-4216.

Procházková, D., Boušova, I., dan Wilhelmova, N. 2011. Antioxidant and prooxidant properties of flavonoids. *Fitoterapia*. 82 : 513–523.

Putra, A. Y. T. 2017. Sifat fisik, kimia dan senyawa bioaktif daun simpor (*Dillenia suffruticosa*) segar dan kukus. Program Studi Ilmu dan Teknologi Pangan. Universitas Gadjah Mada. Yogyakarta.

Reische, D. W. Lillard, D. A., dan Eitenmiller, R. R. 1998. Antioxidants. Akoh, C. C., dan Min, D. B. (Ed.). *Food lipids chemistry, nutrition, and biotechnology*. Halaman 489-516. New York : Marcel Dekker.

Rice-Evans, C.A., Miller, N.J., dan Paganga, G. 1996. Structure–antioxidant activity relationships of flavonoids and phenolic acids. *Free Radical Biology and Medicine*. 20 : 933–956.

Rimdusit, S., Jingjid, S., Damrongsakkul, S., Tiptipakorn, S., dan Takeichi, T. 2008. Biodegradability and property characterizations of methyl cellulose: effect of nanocompositing and chemical crosslinking. *Carbohydrate Polymers*. 72 : 444-455.

Roy, M. K, Juneja, L. R., Isobe, S., dan Tsushida, T. 2009. Steam processed broccoli *(Brassica Oleracea)* has higher antioxidant activity in chemical and cellular assay systems. *Food Chemistry*. 114 : 263-269.

Sacharow, W., dan Griffin, R. C. 1970. Food Packaging. Connecticut : AVI Publishing Co. Inc.

Sarkar, N., dan Walker, L. C. 1995. Hydration-dehydration properties of methylcellulose and hydroxylpropylmethylcellulose. *Carbohydrate Polymers*. 27 : 177-185.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Shaaban, H. A., Mahmoud, K. F., Ibrahim, M. A., dan Ibrahim, G. 2014. Antimicrobial activity of edible methyl cellulose films enriched with essential oils against three common foodborne pathogens. *World Applied Sciences Journal*. 32 (10) : 2092 – 2101.

Shahidi, F. dan Ambigaipalan, P. 2015. Phenolics and polyphenolics in foods, beverages and spices: Antioxidant activity and health effects –A review. *Journal of Functional Foods*. 18 : 820–897.

Shahidi, F., dan Zhong, Y. 2015. Measurement of Antioxidant Activity. *Journal of Functional Foods*. 18 : 757–781.

Shameli, K., Ahmad, M. B., Jazayeri, S. D., Sedaghat, S., Shabanzadeh, P., Jahangirian, H., Mahdavi, M., dan Abdollahi, Y. 2012. Synthesis and characterization of polyethylene glycol mediated silver nanoparticles by the green method. *International Journal of Molecular Sciences*. 13 (6) : 6639-6650.

Sharma, H.K., Chhangte, L., dan Dolui, A.K. 2001. Traditional medicinal plants in Mizoram, India. *Fitoterapia*. 72 : 146-161.

Shome, U., Khanna, R. K., dan Sharma, H. P. 1979. Pharmacognostic studies on *Dillenia indica* Linn. I. Leaf. *Proceedings of the Indian Academy of Science*. 1 (88 B) : 35 – 48.

Shonte, T. T. dan De Kock, H. L. 2017. Descriptive sensory evaluation of cooked stinging nettle *(Urtica Dioica* L.*)* leaves and leaf infusions: effect of using fresh or oven-dried leaves. *South African Journal of Botany*. 110 : 167-176.

Singleton, V. L., Orthofer, R., Lamuela-Raventos, R. M., dan Lester, P. 1999. Analysis of total phenols and other oxidation substrates and antioxidants by means of Folin-Ciocalteu reagent. *Method of Enzymology*. 299 : 152 - 178.

Solano, A. C. V., dan Gante, C. D. R. 2012. Two different processes to obtain antimicrobial packaging containing natural oils. *Food and Bioprocess Technology*. 5 : 2522 – 2528.

Srithi, K., Balslev, H., Wangpakapattanawong, P., Srisanga, P., dan Trisonthi, C. 2009. Medicinal plant knowledge and its erosion among the Mien (Yao) in Northern Thailand. *Journal of Ethnopharmacology*. 123 : 335-342.

Suppakul, P., Miltz, J., Sonneveld, K., dan Bigger, S. W. 2003. Active packaging technologies with an emphasis on antimicrobial packaging and its applications. *Journal of Food Science*. 68 : 408-420.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Sutardi dan Tranggono. 1990. Biokimia dan Teknologi Pasca Panen. Yogyakarta : PAU Pangan dan Gizi UGM.

Terpinc, P., Polak, T., Šegatin, N., Hanzlowsky, A., Ulrih, N. P., dan Abramovicˇ, H. 2011. Antioxidant properties of 4-vinyl derivatives of hydroxycinnamic acids. *Food Chemistry*. 128 : 62–68.

Turhan, K. N., dan Sahbaz, F. 2004. Water vapor permeability, tensile properties and solubility of methylcellulose-based edible films. *Journal of Food Engineering*. 61 : 459–466.

Utami, T. S., Arbianti, R., Hermansyah, H., Reza, A., dan Rini, R. 2009. Perbandingan aktivitas antioksidan ekstrak etanol daun simpur (*Dillenia indica*) dari berbagai metode ekstraksi dengan uji ANOVA. Seminar Nasional Teknik Kimia Indonesia. Bandung.

Voigt, R. 1984. *Buku Pelajaran Teknologi Farmasi*. Diterjemahkan oleh Soewandhi, S. N. Gadjah Mada University Press. Yogyakarta.

Wang, X. L., Yang, K. K., Wang, Y. Z., Wang, D. Y., dan Yang, Z. 2004. Crystallization and morphology of a novel biodegradable polymer system: poly(1,4-dioxan-2- one)/starch blends. *Acta Materialia*. 52 : 4899-4905.

Wiart, C., Mogana, S., Khalifah, S., Mahan, M., Ismail, S., Buckle, M., Narayana, A.K., dan Sulaiman, M. 2004. Antimicrobial screening of plants used for traditional medicine in the state of Perak, Peninsular Malaysia. *Fitoterapia.* 75 : 68-73.

Wickramathilake, B. A. K., Weerasinghe, T. K., dan Ranwala, S. M. W. 2013. Impacts of woody invader *Dillenia suffruticosa* (Griff.) Martelli on physio-chemical properties of soil and, below and above ground flora. *Journal of Tropical Forestry and Environment*. 3 (2) : 66-75.

Wustenberg, T. 2015. Cellulose and cellulose derivatives in the food industry fundamentals and applications. Jerman : Wiley-VCH Verlag GmbH & Co. KGaA.

Xenopoulos, Mascia, L., dan Shaw, S. J. 2001. Optimization of morphology of polyimide-silica hybrids in the production of matrices for carbon fibre composites. *High Performance Polymers*. 13 (3) : 183-199.

Yao, H.W., Li, J., Chen, J.Q., dan Xu, S.Y. 2004. Inhibitory effect of leflunomide on hepatic fibrosis induced by CCl4 in rats. *Acta Pharmacologica Sinica* 25 : 915–920.

UNIVERSITAS
GADJAH MADA
KARAKTERISTIK BAHAN KEMASAN AKTIF BERBAHAN DASAR METHYL CELLULOSE DENGAN PENAMBAHAN EKSTRAK DAUN SIMPOR AIR (Dillenia suffruticosa) DAN GLUTARALDEHYDE
MARIETA DYAH R, Prof. Dr. Ir. Umar Santoso, M.Sc.;Dr. Ir. Supriyadi, M.Sc.
Universitas Gadjah Mada, 2017 | Diunduh dari http://etd.repository.ugm.ac.id/

Yazan, L. S., dan Armania, N. 2014. Dillenia species: A review of the traditional uses, active constituents and pharmacological properties from pre-clinical studies. *Pharmaceutical Biology*. 52 (7) : 890-897.

Yeshwante, S.B., Juvekar, A.R., Nagmoti, D.M., Wankhede, S.S., Shah, A.S., Pimprikar, R.B., dan Saindane, D.S. 2009. Antiinflammatory activity of methanolic extracts of *Dillenia indica* L. leaves. *Journal of Young Pharmacist*. 1 (1) : 63-66.

Yu, S., Tsai, M., Lin, B., Lin, C., dan Mi, F. 2015. Tea catechins-cross-linked methyl cellulose active films for inhibition of light irradiation and lipid peroxidation induced β-carotene degradation. *Food Hydrocolloids*. 44 : 491-505.

Zhang, D., dan Hamauzu, Y. 2004. Phenolics compounds and their antioxidant properties in different tissues of carrots (*Daucus carota* L.). Journal of Food, Agriculture, & Environment. 2 (1) : 95-100.

Zhang, M., Li, X. H., Gong, Y. D., Zhao, N. M. dan Zhang, X. F. 2002. Properties and biocompatibility of chitosan films modified by blending with PEG. *Biomaterials*. 23 (13) : 2641-2648.