

DAFTAR PUSTAKA

- Anonim¹, 2007, *Glossary, The Brownfields and Land Revitalization Technology Support Center*.
- Anonim², 2009, *Production, Properties, and Use of Alginate*, FAO.
- Anonim³, 2009, *Calcium Chloride Prescribing Information*, Hospira, Inc.
- Archana, D., Upadhyay, L., Tewari, R. P., Dutta, J., Huang, Y. B., dan Dutta, P. K., 2013, *Indian Journal of Biotechnology*, Vol. 12., hlm. 475 – 482.
- Basak, P. dan Sen, S., 2012, *Degradation Study and its Effect in Release of Ciprofloxacin from Polyetherurethane*, *Advanced Materials Research*, vol. 584, hlm. 474 – 478.
- BeMiller, J. N., 1986, *An Introduction to Pectins: Structure and Properties*, ACS Symposium Series; American Chemical Society, Washington, DC.
- Benavides, S., Carvajal, R. V., dan Reyes, J. E., 2012, *Physical, Mechanical and Antibacterial Properties of Alginate Film: Effect of the Cross-linking Degree and Oregano Essential Oil Concentration*, *Journal of Food Engineering* 110, hlm. 232 – 239.
- Bierhalz, A. C. K., da Silva, M. A., de Sousa, H. C., Braga, M. E. M., dan Kieckbusch, T. G., 2013, *Influence of Natamycin Loading Methods on The Physical Characteristics of Alginate Active Films*, *J. of Supercritical Fluids* 76, hlm. 74 – 82.
- Bonnaillie, L. M., Zhang, H., Akkurt, S., Yam, K. L., dan Tomasula, P. M., 2014, *Casein Films: The Affects of Formulation, Environmental Conditions and the Addition of Citric Pectin on the Structure and Mechanical Properties*, *Polymers*, 6, hlm. 2018 – 2036.
- BPS, 2015, *Luas Panen Buah-buahan di Indonesia, 2011 – 2015*, Badan Pusat Statistik dan Direktorat Jenderal Holtikultura, Jakarta.
- BPS, 2015, *Produksi Buah-buahan di Indonesia, 2011 – 2015*, Badan Pusat Statistik dan Direktorat Jenderal Holtikultura, Jakarta.
- Braccini, I. dan Perez, S., 2001, *Molecular Basis of Ca²⁺-Induced Gelation in Alginates and Pectins: The Egg-Box Model Revisited*, *Biomacromolecules*, 2, hlm. 1089 – 1096.
- Burt, S., 2004, *Essential Oils: their Antibacterial Properties and Potential Applications in Foods – A Review*, *International Journal of Food Microbiology*, 94, hlm. 223 – 253.
- Carbinatto, F. M., de Castro, A. D., Evangelista, R. C., dan Cury, B. S. F., 2014, *Insights Into The Swelling Process and Drug Release Mechanisms from Cross-linked Pectin/High Amylose Starch Matrices*”, *Asian Journal of Pharmaceutical Sciences*, (9), hlm. 27 – 34.



Chan, L. W., Lee, H. Y., dan Heng, P. W. S., 2006, *Mechanism of External and Internal Gelation and Their Impact on the Functions of Alginate as A Coat and Delivery System*, Carbohydrate Polymers 63, hlm. 176 – 187.S

Cheng, S. S., Liu, J. Y., Tsai, K. H., Chen, W. J., dan Chang, S. T., 2004, *Chemical Composition and Mosquito Larvicidal Activity of Essential Oils from Leaves of Different Cinnamomum mosophloeum Provenances*, Journal of Agricultural and Food Chemistry 52 (14): 4395–400.

da Silva, M. A., Bierhalz, A. C. K., dan Kieckbusch, T. G., 2009, *Alginate and Pectin Composite Films Crosslinked with Ca²⁺ Ions: Effect of The Plasticizer Concentration*, Carbohydrate Polymer (77), hlm. 736 – 742.

Dick-Pfaff, C., 2004, [*Wohlriechender Mückentod*](#), Jerman.

Espitia, P. J. P., Du, W.-X., Avena-Bustillos, R. J., Soares, N. F. F., dan McHugh, T. H., 2014, *Edible films from pectin: physical-mechanical and antimicrobial properties - a review*, Food Hydrocolloids, 35, hlm. 287-296.

Fischer, F. G. dan Dorfel, H., 1955, *Die Polyuronsauren der Braunalgen-(Kohlenhydrate der Algen-I)*, Z Physiol Chem., 302, hlm. 186 – 203. [PubMed: 16912921]

Food Chemical Codex, 1996, *Pectins*, <http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.bi.20.070151.000435>

Fraeye, I., Duvetter, T., Dounghla, E., Van Loey, A., dan Hendrickx, 2010, *Fine-Tuning the Properties of Pectin-Calcium Gels by Control of Pectin Fine Structure, Gel Composition and Environmental Conditions*, Trends in Food Science and Technology, 21(5), hlm. 219 – 228.

Ghaffari, A., Navaee, K., Oskoui, M., Bayati, K., Tehrani, M. R., 2007, *Preparation and Characterization of Free Mixed-Film of Pectin/Chitosan/ Eudragit® RS Intended for Sigmoidal Drug Delivery*, European Journal of Pharmaceutics and Biopharmaceutics, 67, hlm. 175 – 186.

Galus, S. dan Lenart, A., 2013, *Development and Characterization of Comosite Edible Films Based on Sodium Alginate and Pectin*, Journal of Food Eng., 115, hlm. 459 – 465.

Hariyati, M. N., 2006, *Ekstraksi dan Karakterisasi Pektin dari Limbah Proses Pengolahan Jeruk Pontianak (Citrus nobilis var microcarpa)*, Institut Pertanian Bogor, Bogor.

Herbstreith, K., dan Fox, G., 2005, *Pectin*, http://www.herbstreith-fox.de/pektin/forschung_und_entwicklung/forschung_entwicklung04a.htm

Higuera, L., Carballo, G. L., dan Gavara, R., 2015, *Reversible Covalent Immobilization of Cinnamaldehyde on Chitosan Films via Schiff Base Formation and Their Application in Active Food Packaging*, Springer Science Business Media, New York.

Kemp, R. dan Keegan, S. E., 2000, *Calcium Chlorida in Ulmann's Encyclopedia of Industrial Chemistry*, Wiley-VCH, Weinheim.

- Kistriyani, L., 2014, *Kecepatan Release Asam Salisilat dalam Pectin Based Edible Film Sebagai Media Controlled Drug Delivery System*, Universitas Gadjah Mada, Yogyakarta.
- Lee, K. Y. dan Mooney, D. J., 2012, *Alginate: Properties and Biomedical Applications*, Prog. Polym. Sci., hlm. 106 – 126.
- Liu, L., Fishman, M. L., dan Hicks, K. B., 2006, *Pectin in Controlled Drug Delivery – A Review*, Springer.
- Ma, W. B., Feng, J. T., Jiang, Z. L., dan Zhang, X., 2014, *Fumigant Activity of 6 Selected Essential Oil Compounds and Combined Effect of Methyl Salicylate And Trans-Cinnamaldehyde Against Culex pipiens pallens*, Journal of the American Mosquito Control Association 30 (3): hlm. 199–203.
- [McCready, R. M., 1965, *Extraction of The Pectin from The Citrus Peels and Preservation of Pectin Acid*, Method Carbohydrate Chem., 8, hlm. 167 – 170.](#)
- Mishra, R.K., Banthia, A.K., Majeed, A.B.A., 2012, *Pectin Based Formulations for Biomedical Applications : A Review*, Asian Journal of Pharmaceutical and Clinical Research (5), hlm. 1-7.
- Mohnen, D., 2008, *Pectin Structure and Biosynthesis*, Current Opinion in Plant Biology, 11, hlm. 266 – 277.
- Nakka, J., Jansen, K., Ernst, L., 2011, *Effect of Chain Flexibility in The Network Structure on The Viscoelasticity of Epoxy Thermosets*, J. Polym. Res. 18, hlm. 1879 – 1888.
- Otoni, C. G., de Moura, M. R., Aouada, F. A., Camilloto, G. P., Cruz, R. S., Lorevice, M. V., Soares, N. F. F., dan Mattoso, L. H. C., 2014, *Antimicrobial and Physical-Mechanical Properties of Pectin/Papaya Puree/Cinnamaldehyde Nanoemulsion Edible Composite Films*, Food Hydrocolloids 41, hlm. 188 – 194.
- Pavlat, A. E., Grosset, C., Camirand, W., dan Robertson, G. H., 1999, *Ionomeric Films of Alginic Acid*, Journal of Food Science 4, hlm. 61 – 63.
- Pereda, M., Ponce, A. G., Marcovich, N. E., Ruseckaite, R. A., dan Martucci, J. F., 2011, *Chitosan-Gelatin Composites and Bi-layer Films with Potential Antimicrobial Activity*, Food Hydrocolloids, 25, hlm. 1372 – 1381.
- Prezzoti, f. G., Maneguín, A. B., dan Evangelista, R. C., 2012, *Preparation and Characterization of Free Films of High Amylose/Pectin Mixtures Cross-linked with Sodium Trimetaphosphate*, Drug Dev. Ind. Pharm, 38, hlm. 1354 – 1359.
- Pusat Data dan Sistem Informasi Pertanian, 2014, *Statistik Lahan Pertanian Tahun 2009 – 2013*, Kementrian Pertanian, Jakarta.
- Ranganna, S., 1977, *Manual of Analysis of Fruit and Vegetable Products*, McGraw Hill, New Delhi.

- Rim, J. W., 2004, *Physical and Chemical Properties of Water Resistant Sodium Alginate Films*, *Lebensmittel-Wissenschaft Und-Technologie* 37, hlm. 323 – 330.
- Rolin, C. dan De Vries, J. D., 1990, *Pectin, in Food Gels*, Elsevier Applied Science, London, ed. P. Harris, hlm. 401- 34.
- Sadeghi, M., 2011, *Pectin-Based Biodegradable Hydrogels with Potential Biomedical Applications as Drug Delivery System*, *Journal of Biomaterials and Nanobiotechnology*, 2, hlm. 36 – 40.
- Sajjadi, S., Zerfa, M., dan Brooks, B. W., 2002, *Dynamic Behaviour of Drops in Oil/Water/Oil Dispersions*, *Chem. Eng. Sci.*, 57, hlm. 663 – 675.
- Science Lab¹, 2005, *Material Safety Data Sheet Trans-Cinnamaldehyde MSDS*, Sciencelab.com, Inc., Texas.
- Science Lab², 2005, *Material Safety Data Sheet Calcium Chloride Dihydrate MSDS*, Sciencelab.com, Inc., Texas.
- Sediawan, W. B., Prasetya, A., 1997, *Pemodelan Matematis dan Penyelesaian Numeris dalam Teknik Kimia*, ANDI, Yogyakarta.
- Seixas, F. L., Turbiani, F. R. B., Salomao, P. G., Souza, R. P., dan Gimenes, M. L., 2013, *Biofilms Composed of Alginate and Pectin: Effect of Concentration of Crosslinker and Plasticizer Agents*, *Chem. Eng. Transactions*, Vol. 32, hlm. 1693 – 1698.
- Sharma B. R., Naresh L., Dhuldhoya N. C., Merchant S.U., dan Merchant U. C., 2006, *An Overview of Pectins*, *Times Food Processing Journal*, June-July Issue, hlm. 44-51.
- Subash, B. P., dkk., 2007, *Phytomedicine* 14(1), hlm. 15-22.
- Sriamornsak, P., 2002, *Analysis of Selected Physico-Chemical Properties of Pectin and Alginate Gels Intended For Drug Delivery*, Ph.D. Thesis, Charles Sturt University, Australia.
- Sriamornsak, P. dan Kennedy, R. A., 2008, *Swelling and Diffusion Studies of Calcium Polysaccharide Gels Intended For Film Coating*, *Int. J. Pharm.* 358, hlm. 205 – 213.
- Tharanathan, R. n., 2003, *Biodegradable Films and Composite Coatings: Past, Present, and Future*, *Trends in Food Science and Technology*, 14, hlm. 71 – 78.
- Wahyuningtyas, D., 2014, *Pengaruh Gliserol Terhadap Karakteristik Edible Film dari Pektin Sebagai Drug Delivery System*, Universitas Gadjah Mada, Yogyakarta.
- White, G. W., Katona, T., dan Zodda, J. P., 1999, *The Use of High-Performance Size Exclusion Chromatography (HPSEC) as A Molecular Weight Screening Technique for Polygalacturonic Acid for Use in Pharmaceutical Applications*, *Journal of Pharmaceutical and Biomedical Analysis*, 20(6), hlm. 905 – 912.



Pengaruh Cross-linker dan Penambahan Alginat terhadap Karakteristik Pelepasan Sinamaldehyd pada Pectin Edible Film

VENITALITYA A. S. A., Sang Kompiang Wirawan, S.T., M.T., Ph.D.; Yuni Kusumastuti, S.T., M.Eng., D.Eng.

UNIVERSITAS
GADJAH MADA

Universitas Gadjah Mada, 2016 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Wijayakusuma, M. H., Dalimartha, S., dan Wirian, A. S., 1994, *Tanaman Berkhasiat Obat di Indonesia*, Pustaka Kartini, Jakarta.

Ying, L. H., 2006, *Mechanisms of Polymer-Ca²⁺ Interaction and Their Effects on The Characteristics of Alginate Microspheres and Films*, National University of Singapore, Singapura.

Yulianto, K., 1998, *Penelitian Isolasi Alginat Algae Laut Coklat dan Prospek Menuju Industri*, Prosiding Seminar Riptek Kelautan Nasional, hlm. 104 – 108.

Zaffaroni, A., Atherton, dan Calif, 1974, *Drug Delivery System*, United States Patent, Appl. No. 42,786.