

## DAFTAR PUSTAKA

- (1) He, H.; Ye, J.; Zhang, X.; Huang, Y.; Li, X.; Xiao, M. Ä - Carrageenan / Locust Bean Gum As Hard Capsule Gelling Agents. *Carbohydr. Polym.* 2017, 175, 417–424.
- (2) Barham, A. S.; Tewes, F.; Marie, A. Moisture Diffusion And Permeability Characteristics Of Hydroxypropylmethylcellulose And Hard Gelatin Capsules. *Int. J. Pharm.* 2015, 478 (2), 796–803.
- (3) Podshivalov, A.; Zakharova, M.; Glazacheva, E.; Uspenskaya, M. Gelatin / Potato Starch Edible Biocomposite Films : Correlation Between Morphology And Physical Properties. *Carbohydr. Polym.* 2017, 157, 1162–1172.
- (4) Suptijah, P.; Suseno, S. H.; Kurniawati. Kapsul Keras Alternatif Pengganti Kapsul Gelatin. *Jphpi* 2012, 15 (3), 223–231.
- (5) Faulhammer, E.; Kovalcik, A.; Wahl, V.; Markl, D.; Stelzer, F.; Lawrence, S.; Khinast, J. G.; Paudel, A. Multi-Methodological Investigation Of The Variability Of The Microstructure Of Hpmc Hard Capsules. *Int. J. Pharm.* 2016, 511, 840–854.
- (6) Zhang, N.; Liu, H.; Yu, L.; Liu, X.; Zhang, L.; Chen, L.; Shanks, R. Developing Gelatin – Starch Blends For Use As Capsule Materials. *Carbohydr. Polym.* 2013, 92 (1), 455–461.
- (7) Biswas, N.; Sahoo, R. K. Tapioca Starch Blended Alginate Mucoadhesive-Floating Beads For Intragastric Delivery Of Metoprolol Tartrate. *Int. J. Biol. Macromol.* 2016, 83, 61–70.
- (8) Khlibsuwan, R.; Tansena, W.; Pongjanyakul, T. Modification Of Alginate Beads Using Gelatinized And Ungelatinized Arrowroot ( *Tacca Leontopetaloides* L . Kuntze ) Starch For Drug Delivery. *Int. J. Biol. Macromol.* 2018, 118, 683–692.
- (9) Zhang, L.; Zhao, Y.; Hu, W.; Qian, J.; Ding, X.; Guan, C. Multi-Scale Structures Of Cassava And Potato Starch Fractions Varying In Granule Size. *Carbohydr. Polym.* 2018, 200, 400–407.
- (10) Feng, Y.; Kopplin, G.; Sato, K.; Draget, K. I.; Vårum, K. M. Alginate Gels With A Combination Of Calcium And Chitosan Oligomer Mixtures As Crosslinkers. *Carbohydr. Polym.* 2017, 156, 490–497.
- (11) Segale, L.; Mannina, P.; Giovannelli, L.; Pattarino, F. Calcium Alginate Multi-Unit Oral Dosage Form For Delayed Release Of Celecoxib. *J. Drug Deliv. Sci. Technol.* 2015, 26, 35–43.
- (12) Fawzy, M. A.; Gomaa, M.; Hifney, A. F.; Abdel-Gawad, K. M. Optimization Of Alginate Alkaline Extraction Technology From *Sargassum Latifolium* And Its Potential Antioxidant And Emulsifying Properties. *Carbohydr. Polym.* 2017, 157, 1903–1912.
- (13) Abdelgawad, A. M.; Hudson, S. M. International Journal Of Biological

- Macromolecules Chitosan Nanoparticles : Polyphosphates Cross-Linking And Protein Delivery Properties. *Int. J. Biol. Macromol.* 2019, 136, 133–142.
- (14) Yin, Z.; Wang, Y.; Wang, K. A Ph-Responsive Composite Hydrogel Beads Based On Agar And Alginate For Oral Drug Delivery. *J. Drug Deliv. Sci. Technol.* 2018, 43, 12–18.
- (15) Hoag, S. W. *Capsules Dosage Form: Formulation And Manufacturing Considerations*; Elsevier Inc., 2017.
- (16) Syafiqoh, F. Analisis Gelatin Sapi Dan Gelatin Babi Pada Produk Cangkang Kapsul Keras Obat Dan Vitamin Menggunakan Ftir Dan Kckt, Uin Syarif Hidayatullah, 2013.
- (17) Shahiran, S. B. B. (Ump). *Farmakope Indonesia V, V.*; Indonesia, 2009.
- (18) Roselyndiar. Formulasi Kasul ( *Apium Graveolens L.* ) \Fdam Daum Tempuyimh( *Sonchus Arvensis L.* ), 2012.
- (19) Singh, R. Formulation Development And Evaluation Of Diacerein Hard. *Int. J. Pharm. Reserch Dev.* 2014, 6 (8), 019–025.
- (20) Kathpalia, H. Recent Trends In Hard Gelatin Capsule Delivery System. *J. Advantaced Pharm. Educ. Res.* 2014, 4 (2), 165–177.
- (21) Polat, S.; Ozogul, Y. Seasonal Proximate And Fatty Acid Variations Of Some Seaweeds From The Northeastern Mediterranean Coast. *Oceanologia* 2013, 55 (2), 375–391.
- (22) Abka, R.; Keramat, J.; Hamdami, N.; Ursu, A.; Delattre, C.; Laroche, C.; Gardarin, C.; Lecerf, D.; Desbrières, J.; Djelveh, G.; Et Al. Extraction And Characterization Of An Alginate From The Iranian Brown Seaweed *Nizimuddinia Zanardini*. *Int. J. Biol. Macromol.* 2018, 118, 1073–1081.
- (23) Sinurat, E. Isolasi Dan Karakterisasi Serta Uji Aktivitas Fukoidan Sebagai Anti Koagulan Dari Rumput Laut Coklat(*Sargassum Crassifolium*), Indonesia, 2011.
- (24) Handayani, T.; Sutarno; Setyawan, A. D. Analisis Komposisi Nutrisi Rumput Laut *Sargassum Crassifolium*. *Biofarmasi* 2004, 2 (2), 45–52.
- (25) Swift, S. M.; Hudgens, J. W.; Heselpoth, R. D.; Bales, P. M.; Nelson, D. C. Characterization Of Algmsp , An Alginate Lyase From *Microbulbifer Sp.* 6532a. *Plos* 2014, 9 (11), 1–11.
- (26) Cerciello, A.; Del, P.; Granata, V.; Sala, M.; Aquino, R. P.; Russo, P. International Journal Of Biological Macromolecules Synergistic Effect Of Divalent Cations In Improving Technological Properties Of Cross-Linked Alginate Beads. *Int. J. Biol. Macromol.* 2017, 101, 100–106.
- (27) Lins, K. O. A. L.; Vale, M. L.; Ribeiro, R. A.; Costa-Lotufu, L. V. Proinflammatory Activity Of An Alginate Isolated From *Sargassum Vulgare*. *Carbohydr. Polym.* 2013, 92 (1), 414–420.

- (28) Rhein-Knudsen, N.; Tutor, M.; Ajalloueiian, F.; Meyer, A. S. Characterization Of Alginates From Ghanaian Brown Seaweeds: *Food Hydrocoll.* 2017, *71*, 236–244.
- (29) Fertah, M.; Belfkira, A.; Dahmane, E. Montassir; Taourirte, M.; Brouillette, F. Extraction And Characterization Of Sodium Alginate From Moroccan Laminaria Digitata Brown Seaweed. *Arab. J. Chem.* 2017, *10*, S3707–S3714.
- (30) Guarino, V.; Caputo, T.; Altobelli, R.; Ambrosio, L. Degradation Properties And Metabolic Activity Of Alginate And Chitosan Polyelectrolytes For Drug Delivery And Tissue Engineering Applications. *Mater. Sci.* 2015, *2* (4), 497–502.
- (31) Levy, D.; Rabinowitch, H. D.; Hebrew, T. *Potatoes*, 2nd Ed.; Elsevier Ltd.: Rehovot, Israel, 2017; Vol. 3.
- (32) Wulandari, A. N.; Heddy, S.; Suryanto, A. Penggunaan Bobot Umbi Bibit Pada Peningkatan Hasil Tanaman Kentang (*Solanum Tuberosum* L.) G3 Dan G4 Varietas Granola. *J. Produksi Tanam.* 2014, *2* (1), 65–72.
- (33) Singh, J.; Kaur, L.; Mccarthy, O. J. *Chapter 10 Potato Starch And Its Modification*, First Edit.; Elsevier Ltd., 2009.
- (34) Balakrishnan, P.; Geethamma, V. G.; Gopi, S.; George, M.; Huski, M.; Kalarikkal, N.; Volova, T.; Rouxel, D.; Thomas, S. Thermal , Biodegradation And Theoretical Perspectives On Nanoscale Con Fi Nement In Starch / Cellulose Nanocomposite Modi Fi Ed Via Green Crosslinker. *Int. J. Biol. Macromol.* 2019, *134*, 781–790.
- (35) Bergel, B. F.; Osorio, S. D.; Machado, L.; Marlene, R.; Santana, C. E Ff Ects Of Hydrophobized Starches On Thermoplastic Starch Foams Made From Potato Starch. *Carbohydr. Polym.* 2018, *200* (March), 106–114.
- (36) Ogunsona, E.; Ojogbo, E.; Mekonnen, T. Advanced Material Applications Of Starch And Its Derivatives. *Eur. Polym. J.* 2018, *108*, 570–581.
- (37) Liu, F.; Chiou, B.; Avena-Bustillos, R. J.; Zhang, Y.; Li, Y.; Mchugh, T. H.; Zhong, F. Food Hydrocolloids Study Of Combined Effects Of Glycerol And Transglutaminase On Properties Of Gelatin Fi Lms. *Food Hydrocoll.* 2017, *65*, 1–9.
- (38) Belbekhouche, S.; Charaabi, S.; Carbonnier, B. Colloids And Surfaces B : Biointerfaces Glucose-Sensitive Capsules Based On Hydrogen-Bonded ( Polyvinylpyrrolidone / Phenylboronic – Modi Fi Ed Alginate ) System. *Colloids Surfaces B Biointerfaces* 2019, *177* (February), 416–424.
- (39) Kumar, T.; Thakur, A.; Alexander, A.; Badwaik, H.; Tripathi, D. K. Modified Chitosan Hydrogels As Drug Delivery And Tissue Engineering Systems : Present Status And Applications. *Acta Pharm. Sin. B* 2012, *2* (5), 439–449.
- (40) Zdanowicz, M.; Roman, J.; Pilawka, R. Deep Eutectic Solvents As Simultaneous Plasticizing And Crosslinking Agents For Starch. *Int. J. Biol. Macromol.* 2019, *129*, 1040–1046.
- (41) Tanetrungroj, Y.; Prachayawarakorn, J. Effect Of Dual Modi Fi Cation On

- Properties Of Biodegradable Crosslinked- Oxidized Starch And Oxidized-Crosslinked Starch *Fi Lms. Int. J. Biol. Macromol.* 2018, 120, 1240–1246.
- (42) Liang, J.; Chen, R. Impact Of Cross-Linking Mode On The Physical Properties Of Zein / Pva Composite *Fi Lms. Food Packag. Shelf Life* 2018, 18 (September), 101–106.
- (43) Petraityt, S. Enhancing Encapsulation Efficiency Of Alginate Capsules Containing Lactic Acid Bacteria By Using Different Divalent Cross-Linkers Sources. *Lwt - Food Sci. Technol.* 2019, 110, 307–315.
- (44) Patel, M. A.; Aboughaly, M. H. H.; Schryer-Praga, J. V.; Chadwick, K. The Effect Of Ionotropic Gelation Residence Time On Alginate Cross-Linking And Properties. *Carbohydr. Polym.* 2017, 155, 362–371.
- (45) Dmour, I.; Taha, M. O. Novel Nanoparticles Based On Chitosan-Dicarboxylate Conjugates Via Tandem Ionotropic / Covalent Crosslinking With Tripolyphosphate And Subsequent Evaluation As Drug Delivery Vehicles ( B ). *Int. J. Pharm.* 2017, 529 (1–2), 15–31.
- (46) Karimah, M. Pembuatan Dan Karakterisasi Kapsul Pati-Alginat Dari Ekstraksi Rumput Laut Coklat (*Sargassum Sp.*) Sebagai Material Drug Delivery System, Airlangga, 2016.
- (47) Bilal, M.; Niazi, K.; Broekhuis, A. A. Surface Photo-Crosslinking Of Plasticized Thermoplastic Starch Films. *Eur. Polym. J.* 2015, 64, 229–243.
- (48) Khan, B.; Bilal, M.; Niazi, K.; Jahan, Z.; Farooq, W.; Raza, S.; Ali, M.; Ahmed, I.; Hussain, A. Effect Of Ultra-Violet Cross-Linking On The Properties Of Boric Acid And Glycerol Co-Plasticized Thermoplastic Starch *Fi Lms. Food Packag. Shelf Life* 2019, 19 (May 2018), 184–192.
- (49) Schmitt, H.; Guidez, A.; Prashantha, K.; Soulestin, J.; Lacrampe, M. F.; Krawczak, P. Studies On The Effect Of Storage Time And Plasticizers On The Structural Variations In Thermoplastic Starch. *Carbohydr. Polym.* 2015, 115, 364–372.
- (50) Kaban, J.; Bangun, H. Pembuatan Membran Kompleks Polielektrolit. *J. Sains Kim.* 2006, 10 (1), 10–16.
- (51) Matta, F.; Maria, S.; Caon, T.; Ignacio, J.; Helena, L.; Mei, I. Edible *Fi Lms* And Coatings Based On Starch / Gelatin : Film Properties And Effect Of Coatings On Quality Of Refrigerated Red Crimson Grapes. *Postharvest Biol. Technol.* 2015, 109, 57–64.
- (52) Shekunov, B.; Montgomery, E. R. Theoretical Analysis Of Drug Dissolution: I. Solubility And Intrinsic Dissolution Rate. *J. Pharm. Sci.* 2016, 105 (9), 2685–2697.
- (53) Babu, B. R. Method Development And Validation For Dissolution Testings. *Res. J. Pharm. Biol. Chem. Sci.* 2011, 2 (1), 561–575.
- (54) Khan, S.; Trivedi, V.; Boateng, J. Functional Physico-Chemical , Ex Vivo

Permeation And Cell Viability Characterization Of Omeprazole Loaded Buccal Films For Paediatric Drug Delivery. *Int. J. Pharm.* 2016, 500 (1–2), 217–226.

- (55) Seoane, M.; Esperanza, M.; Cid, Á. Cytotoxic Effects Of The Proton Pump Inhibitor Omeprazole On The Non-Target Marine Microalga *Tetraselmis Suecica*. *Aquat. Toxicol.* 2017, 191 (April), 62–72.
- (56) Enmark, M.; Samuelsson, J.; Forssén, P.; Fornstedt, T. Enantioseparation Of Omeprazole — Effect Of Different Packing Particle Size On Productivity. *J. Chromatogr. A* 2012, 1240, 123–131.
- (57) Khan, S.; Trivedi, V.; Mitchell, J.; Boateng, J. S. Conversion Of Sustained Release Omeprazole Loaded Buccal Films Into Fast Dissolving Strips Using Supercritical Carbon Dioxide (SccO<sub>2</sub>) Processing, For Potential Paediatric Drug Delivery. *Eur. J. Pharm. Sci.* 2016, 93, 45–55.
- (58) Yudiati, E.; Isnansetyo, A. Fish & Shellfish Immunology Innate Immune-Stimulating And Immune Genes Up-Regulating Activities Of Three Types Of Alginate From *Sargassum Siliquosum* In Pacific White Shrimp, *Litopenaeus Vannamei*. *Fish Shellfish Immunol.* 2016, 54, 46–53.
- (59) Bertagnolli, C.; Uhart, A.; Dupin, J.; Gurgel, M.; Guibal, E.; Desbrieres, J. Bioresource Technology Biosorption Of Chromium By Alginate Extraction Products From *Sargassum Filipendula*: Investigation Of Adsorption Mechanisms Using X-Ray Photoelectron Spectroscopy Analysis. *Bioresour. Technol.* 2014, 164, 264–269.
- (60) Metode, D.; Habibah, R.; Nasution, D. Y.; Muis, Y. Penentuan Berat Molekul Dan Derajat Polimerisasi  $\alpha$  – Selulosa Yang Berasal Dari Alang-Alang (*Imperata Cylindrica*) Dengan Metode Viskositas. *J. Saintia Kim.* 2013, 1 (2).
- (61) Murniati, A.; Armedia, R. Kinetika Aktivitas Polifenol Oksidase Dari Kentang Untuk Deteksi Fenol. 2015, 23 (1), 1–5.
- (62) Sari, F. K.; Nurhayati. The Extraction Of Starch Resistant From Three Local Varieties Potatoes. *Berk. Ilm. Pertan.* 2013, 1 (2), 38–42.
- (63) Maharani, M. A.; Widyayanti, R. Pembuatan Alginat Dari Rumput Laut Untuk Menghasilkan Produk Dengan Rendemen Dan Viskositas Tinggi. 2010, 2–6.
- (64) Daemi, H.; Barikani, M. Synthesis And Characterization Of Calcium Alginate Nanoparticles, Sodium Homopolymannuronate Salt And Its Calcium Nanoparticles. *Sci. Iran.* 2012, 19 (6), 2023–2028.
- (65) Jayanudin; Zakiyah, A. Pengaruh Suhu Dan Rasio Pelarut Ekstraksi Terhadap Rendemen Dan Viskositas Natrium Alginat Dari Rumput Laut Cokelat (*Sargassum Sp*). *J. Integr. Proses* 2014, 5 (1), 51–55.
- (66) Masuelli, M. A.; Illanes, C. O. Review Of The Characterization Of Sodium Alginate By Intrinsic Viscosity Measurements. Comparative Analysis Between Conventional And Single Point Methods. *Int. J. Biomater. Sci. Eng.* 2014, 1 (1), 1–11.

- (67) Alves, J. S.; Dos Reis, K. C.; Menezes, E. G. T.; Pereira, F. V.; Pereira, J. Effect Of Cellulose Nanocrystals And Gelatin In Corn Starch Plasticized Films. *Carbohydr. Polym.* 2015, 115, 215–222. <https://doi.org/10.1016/j.carbpol.2014.08.057>.

