

DAFTAR PUSTAKA

- Akdeniz, B., Sumnu, G., & Sahin, S. (2017). The effects of maltodextrin and gum Arabic on encapsulation of onion skin phenolic compounds. *Chemical Engineering Transactions*, 57, 1891–1896. <https://doi.org/10.3303/CET1757316>
- Amaral, V. A., Alves, T. F. R., de Souza, J. F., Batain, F., Crescencio, K. M. de M., Soeiro, V. S., de Barros, C. T., & Chaud, M. V. (2021). Phenolic compounds from *Psidium guajava* (Linn.) leaves: Effect of the extraction-assisted method upon total phenolics content and antioxidant activity. *Biointerface Research in Applied Chemistry*, 11(2), 9346–9357. <https://doi.org/10.33263/BRIAC112.93469357>
- Antioksidan dan Peranannya Terhadap Kesehatan*. (n.d.).
- Anwar, K., & Triyasmono, L. (2016). Kandungan Total Fenolik , Total Flavonoid , dan Aktivitas Antioksidan Ekstrak Etanol Buah Mengkudu (*Morinda citrifolia* L.). *Kandungan Total Fenolik , Total Flavonoid , Dan Aktivitas Antioksidan Ekstrak Etanol Buah Mengkudu (Morinda Citrifolia L.)*, 3(1), 83–92.
- Assadpour, E., & Jafari, S. M. (2019). Advances in Spray-Drying Encapsulation of Food Bioactive Ingredients: From Microcapsules to Nanocapsules. *Annual Review of Food Science and Technology*, 10, 103–131. <https://doi.org/10.1146/annurev-food-032818-121641>
- Avadi, M. R., Sadeghi, A. M. M., Mohammadpour, N., Abedin, S., Atyabi, F., Dinarvand, R., & Rafiee-Tehrani, M. (2010). Preparation and characterization of insulin nanoparticles using chitosan and Arabic gum with ionic gelation method. *Nanomedicine: Nanotechnology, Biology, and Medicine*, 6(1), 58–63. <https://doi.org/10.1016/j.nano.2009.04.007>
- AZIZ, S. A., & GHULAMAHD, M. (2011). Red Guava Leaf Harvesting Impact on Flavonoid Optimization in Different Growth Phases. *HAYATI Journal of Biosciences*, 18(2), 97–102. <https://doi.org/10.4308/hjb.18.2.97>
- Bakowska-Barczak, A. M., & Kolodziejczyk, P. P. (2011). Black currant polyphenols: Their storage stability and microencapsulation. *Industrial Crops and Products*, 34(2), 1301–1309. <https://doi.org/10.1016/j.indcrop.2010.10.002>
- Bintarti, T. (2006). Antioksidan Dari Daun Jambu Biji (*Psidium guajava* . L). *Jurnal Ilmiah PANNMED*, 9(1), 40–44. <https://journal.ipb.ac.id/id/index.php/JIPI/article/view/13917>
- Blois, M. S. (1958). Antioxidant determinations by the use of a stable free radical [10]. *Nature*, 181(4617), 1199–1200. <https://doi.org/10.1038/1811199a0>
- Chao, J., Wang, H., Zhao, W., Zhang, M., & Zhang, L. (2012). Investigation of the inclusion behavior of chlorogenic acid with hydroxypropyl- β -cyclodextrin.

International Journal of Biological Macromolecules, 50(1), 277–282.

<https://doi.org/10.1016/j.ijbiomac.2011.11.008>

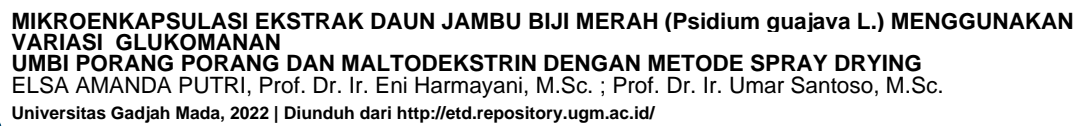
- Chatterjee, D., Bhattacharjee, P., Satpati, G. G., & Pal, R. (2014). Spray dried extract of *Phormidium valderianum* as a promising source of natural antioxidant. *International Journal of Food Science*, 2014(August). <https://doi.org/10.1155/2014/897497>
- Chen, L., Gnanaraj, C., Arulselvan, P., El-Seedi, H., & Teng, H. (2019). A review on advanced microencapsulation technology to enhance bioavailability of phenolic compounds: Based on its activity in the treatment of Type 2 Diabetes. *Trends in Food Science and Technology*, 85(January), 149–162. <https://doi.org/10.1016/j.tifs.2018.11.026>
- Dachriyanus, D. (2017). Analisis Struktur Senyawa Organik Secara Spektroskopi. In *Analisis Struktur Senyawa Organik Secara Spektroskopi*. <https://doi.org/10.25077/car.3.1>
- Estiasih, T., Putri, D. R., & Waziroh, E. (2017). *Umbi-umbian dan Pengolahannya*. UM Press.
- Freire, J. M., Maria, C., Abreu, P. De, & Donizette, C. (2013). Assessment of mineral substances level and antioxidant potential in leaves of three guava tree varieties. *Journal of Medicinal Plants Research*, 7(32), 2365–2369. <https://doi.org/10.5897/JMPR2013.2597>
- Gardjito, M., Murdiati, A., & Aini, N. (2006). Mikroenkapsulasi β -karoten buah labu kuning dengan enkapsulan whey dan karbohidrat. *Jurnal Teknologi Pertanian*, 2(1), 13–18.
- Goula, A. M., & Adamopoulos, K. G. (2005). Stability of lycopene during spray drying of tomato pulp. *Lwt*, 38(5), 479–487. <https://doi.org/10.1016/j.lwt.2004.07.020>
- Gutiérrez, R. M. P., Mitchell, S., & Solis, R. V. (2008). *Psidium guajava*: A review of its traditional uses, phytochemistry and pharmacology. *Journal of Ethnopharmacology*, 117(1), 1–27. <https://doi.org/10.1016/j.jep.2008.01.025>
- Hapsari, A. M., Masfria, M., & Dalimunthe, A. (2018). Pengujian Kandungan Total Fenol Ekstrak Etanol Tempuyung (*Shoncus arvensis* L.). *Talenta Conference Series: Tropical Medicine (TM)*, 1(1), 284–290. <https://doi.org/10.32734/tm.v1i1.75>
- Harmayani, E., Aprilia, V., & Marsono, Y. (2014). Characterization of glucomannan from *Amorphophallus oncophyllus* and its prebiotic activity in vivo. *Carbohydrate Polymers*, 112, 475–479. <https://doi.org/10.1016/j.carbpol.2014.06.019>
- Heinrich, M., Ankli, A., Frei, B., Weimann, C., & Sticher, O. (1998). Medicinal plants in Mexico: Healers' consensus and cultural importance. *Social Science and Medicine*, 47(11), 1859–1871. [https://doi.org/10.1016/S0277-9536\(98\)00181-6](https://doi.org/10.1016/S0277-9536(98)00181-6)
- Iamjud, K., Banyen, N., Boonprakob, U., & Thaipong, K. (2014). Ascorbic acid, total phenolics and antioxidant activity of guava leaf extracts. *Acta Horticulturae*,

- 1024(May), 367–372. <https://doi.org/10.17660/ActaHortic.2014.1024.50>
- Imeson, A. (2009). Food Stabilisers, Thickeners and Gelling Agents. In *Food Stabilisers, Thickeners and Gelling Agents*. <https://doi.org/10.1002/9781444314724>
- Jayanudin, J., & Rochmadi, R. (2017). Pengaruh Perbedaan Bahan Penyalut Terhadap Efisiensi Enkapsulasi Oleoresin Jahe Merah. *ALCHEMY Jurnal Penelitian Kimia*, 13(2), 275–287. <https://doi.org/10.20961/alchemy.v13i2.5406>
- Kenyon, M. M. (1995). *Modified Starch, Maltodextrin, and Corn Syrup Solids as Wall Materials for Food Encapsulation*. 42–50. <https://doi.org/10.1021/bk-1995-0590.ch004>
- Kha, T. C., Nguyen, M. H., & Roach, P. D. (2010a). Effects of spray drying conditions on the physicochemical and antioxidant properties of the Gac (*Momordica cochinchinensis*) fruit aril powder. *Journal of Food Engineering*, 98(3), 385–392. <https://doi.org/10.1016/j.jfoodeng.2010.01.016>
- Kha, T. C., Nguyen, M. H., & Roach, P. D. (2010b). Effects of spray drying conditions on the physicochemical and antioxidant properties of the Gac (*Momordica cochinchinensis*) fruit aril powder. *Journal of Food Engineering*, 98(3), 385–392. <https://doi.org/10.1016/j.jfoodeng.2010.01.016>
- Khasanah, L. U., Anandhito, B. K., Rachmawati, T., Utami, R., & Manuhara, G. J. (2015). *Pengaruh Rasio Bahan Penyalut Maltodekstrin, Gum Arab, dan Susu Skim Terhadap Karakteristik Fisik Dan Kimia Mikrokapsul Oleoresin Daun Kayu Manis (*Cinnamomum burmannii*)*. 35(4), 414–421.
- Kim, S. N., Kim, M. R., Cho, S. M., Kim, S. Y., Kim, J. B., & Cho, Y. S. (2012). Antioxidant activities and determination of phenolic compounds isolated from oriental plums (*Soldam*, *Oishiwase* and *Formosa*). *Nutrition Research and Practice*, 6(4), 277–285. <https://doi.org/10.4162/nrp.2012.6.4.277>
- Kosińska, A., Karamać, M., Estrella, I., Hernández, T., Bartolomé, B., & Dykes, G. A. (2012). Phenolic compound profiles and antioxidant capacity of persea americana mill. peels and seeds of two varieties. *Journal of Agricultural and Food Chemistry*, 60(18), 4613–4619. <https://doi.org/10.1021/jf300090p>
- Kumar, V., Bera, T., Saxena, P. S., & Nath, G. (2011). *Study of mechanism of enhanced antibacterial activity by green synthesis of silver nanoparticles My IOPscience Study of mechanism of enhanced antibacterial activity by green synthesis of silver nanoparticles This content has been downloaded from IOPscienc . June 2016*. <https://doi.org/10.1088/0957-4484/22/41/415104>
- Lafarge, C., & Cayot, N. (2018). Potential Use of Mixed Gels from Konjac Glucomannan and Native Starch for Encapsulation and Delivery of Aroma Compounds: A Review. *Starch/Staerke*, 70(9–10), 1–34. <https://doi.org/10.1002/star.201700159>
- Lozano-Vazquez, G., Lobato-Calleros, C., Escalona-Buendia, H., Chavez, G., Alvarez-

- Ramirez, J., & Vernon-Carter, E. J. (2015). Effect of the weight ratio of alginate-modified tapioca starch on the physicochemical properties and release kinetics of chlorogenic acid containing beads. *Food Hydrocolloids*, 48(March 2015), 301–311. <https://doi.org/10.1016/j.foodhyd.2015.02.032>
- Luca, A., Cilek, B., Hasirci, V., Sahin, S., & Sumnu, G. (2013). Effect of Degritting of Phenolic Extract from Sour Cherry Pomace on Encapsulation Efficiency-Production of Nano-suspension. *Food and Bioprocess Technology*, 6(9), 2494–2502. <https://doi.org/10.1007/s11947-012-0880-z>
- Molyneux Philip. (2004). The Use Of The Stable Free Radical Diphenylpicryl-hydrazyl (DPPH) For Estimating Anti-oxidant Activity. *Songklanakarin Journal of Science and Technology*, 26(May), 1–10.
- Nazzaro, F., Orlando, P., Fratianni, F., & Coppola, R. (2012). Microencapsulation in food science and biotechnology. *Current Opinion in Biotechnology*, 23(2), 182–186. <https://doi.org/10.1016/j.copbio.2011.10.001>
- Noriham, A., Dian-Nashiela, F., Kherni Hafifi, B., Nooraain, H., & Azizah, A. H. (2015). Influences of Maturity Stages and Extraction Solvents on Antioxidant Activity of Cosmos Caudatus Leaves Influences of Maturity Stages and Extraction Solvents on. *International Journal of Research Studies in Biosciences*, 3(12), 1–10.
- Nuryani, S. (2017). Pemanfaatan Ekstrak Daun Jambu Biji (*Psidium guajava* Linn) Sebagai Antibakteri dan Antifungi. *Jurnal Teknologi Laboratorium*, 6(2), 41. <https://doi.org/10.29238/teknolabjournal.v6i2.95>
- Oh, W. K., Lee, C. H., Lee, M. S., Bae, E. Y., Sohn, C. B., Oh, H., Kim, B. Y., & Ahn, J. S. (2005). Antidiabetic effects of extracts from *Psidium guajava*. *Journal of Ethnopharmacology*, 96(3), 411–415. <https://doi.org/10.1016/j.jep.2004.09.041>
- Parimin. (2005). Jambu Biji. In *Budidaya dan Ragam Pemanfaatannya*. (pp. 1–16).
- Pieczkolan, E., & Kurek, M. A. (2019). Use of guar gum, gum arabic, pectin, beta-glucan and inulin for microencapsulation of anthocyanins from chokeberry. *International Journal of Biological Macromolecules*, 129, 665–671. <https://doi.org/10.1016/j.ijbiomac.2019.02.073>
- Pourashouri, P., Shabanpour, B., Razavi, S. H., Jafari, S. M., Shabani, A., & Aubourg, S. P. (2014). Impact of Wall Materials on Physicochemical Properties of Microencapsulated Fish Oil by Spray Drying. *Food and Bioprocess Technology*, 7(8), 2354–2365. <https://doi.org/10.1007/s11947-013-1241-2>
- Rigon, R., Bancheri, M., & Green, T. R. (2016). Age-ranked hydrological budgets and a travel time description of catchment hydrology. *Hydrology and Earth System Sciences*, 20(12), 4929–4947. <https://doi.org/10.5194/hess-20-4929-2016>
- Rutz, J. K., Borges, C. D., Zambiasi, R. C., Crizel-Cardozo, M. M., Kuck, L. S., & Noreña, C. P. Z. (2017). Microencapsulation of palm oil by complex coacervation for

- application in food systems. *Food Chemistry*, 220, 59–66.
<https://doi.org/10.1016/j.foodchem.2016.09.194>
- Saéñz, C., Tapia, S., Chávez, J., & Robert, P. (2009). Microencapsulation by spray drying of bioactive compounds from cactus pear (*Opuntia ficus-indica*). *Food Chemistry*, 114(2), 616–622. <https://doi.org/10.1016/j.foodchem.2008.09.095>
- Saleh, K., & Guigon, P. (2007). Chapter 7 Coating and encapsulation processes in powder technology. *Handbook of Powder Technology*, 11, 323–375.
[https://doi.org/10.1016/S0167-3785\(07\)80042-X](https://doi.org/10.1016/S0167-3785(07)80042-X)
- Sansone, F., Mencherini, T., Picerno, P., D'Amore, M., Aquino, R. P., & Lauro, M. R. (2011). Maltodextrin/pectin microparticles by spray drying as carrier for nutraceutical extracts. *Journal of Food Engineering*, 105(3), 468–476.
<https://doi.org/10.1016/j.jfoodeng.2011.03.004>
- Santana, A. A., de Oliveira, R. A., Pinedo, A. A., Kurozawa, L. E., & Park, K. J. (2013). Microencapsulation of babassu coconut milk. *Food Science and Technology*, 33(4), 737–744. <https://doi.org/10.1590/S0101-20612013000400020>
- Saputro, E. A., & Lefiyanti, Olim, E. M. (Universitas S. M. (2014). Pemurnian tepung glukomanan dari umbi porang (*Amorphophallus muelleri* Blume) menggunakan proses ekstraksi/leaching dengan larutan etanol. *Simposium Nasional RAPI XIII*, 7–13.
- Sekarsari, S., Widarta, I. W. R., & Jambe, A. A. G. N. A. (2019). PENGARUH SUHU DAN WAKTU EKSTRAKSI DENGAN GELOMBANG ULTRASONIK TERHADAP AKTIVITAS ANTIOKSIDAN EKSTRAK DAUN JAMBU BIJI (*Psidium guajava* L.). *Jurnal Ilmu Dan Teknologi Pangan (ITEPA)*, 8(3), 267.
<https://doi.org/10.24843/itepa.2019.v08.i03.p05>
- Seo, J., Lee, S., Elam, M. L., Johnson, S. A., Kang, J., & Arjmandi, B. H. (2014). Study to find the best extraction solvent for use with guava leaves (*Psidium guajava* L.) for high antioxidant efficacy. *Food Science & Nutrition*, 2(2), 174–180.
<https://doi.org/10.1002/fsn3.91>
- Shyamala, S., & Manjunathan, J. (2015). *Antioxidant activity of Psidium guajava* Linn. May.
- Siregar, T. M., & Kristanti, C. (2019). Mikroenkapsulasi Senyawa Fenolik Ekstrak Daun Kenikir (*Cosmos caudatus* K.). *Jurnal Aplikasi Teknologi Pangan*, 8(1), 31–37.
<https://doi.org/10.17728/jatp.3304>
- Sobel, R., Versic, R., & Gaonkar, A. G. (2014). Introduction to Microencapsulation and Controlled Delivery in Foods. In *Microencapsulation in the Food Industry*. Elsevier Inc. <https://doi.org/10.1016/b978-0-12-404568-2.00001-7>
- States, U. (2003). (12) *Patent Application Publication* (10) Pub . No .: US 2003 / 0124222 A1 *Patent Application Publication*.
- Sunarti. (2018). *Serat Pangan dalam Penanganan Sindrom Metabolik* (p. 217).

- Supriati, Y. (2016). KEANEKARAGAMAN ILES-ILES (*Amorphophallus* spp.) DAN POTENSINYA UNTUK INDUSTRI PANGAN FUNGSIONAL, KOSMETIK, DAN BIOETANOL. *Jurnal Penelitian Dan Pengembangan Pertanian*, 35(2), 69. <https://doi.org/10.21082/jp3.v35n2.2016.p69-80>
- Tayade, A. B., Dhar, P., Sharma, M., Chauhan, R. S., Chaurasia, O. P., & Srivastava, R. B. (2013). Antioxidant capacities, phenolic Contents, and GC/MS analysis of *rhodiola imbricata* Edgew. Root extracts from Trans-Himalaya. *Journal of Food Science*, 78(3), 402–410. <https://doi.org/10.1111/1750-3841.12054>
- Thuaytong, W., & Anprung, P. (2011). Bioactive compounds and prebiotic activity in thailand-grown red and white guava fruit (*Psidium guajava* L.). *Food Science and Technology International*, 17(3), 205–212. <https://doi.org/10.1177/1082013210382066>
- Tobin, J. T., Fitzsimons, S. M., Chaurin, V., Kelly, A. L., & Fenelon, M. A. (2012). Thermodynamic incompatibility between denatured whey protein and konjac glucomannan. *Food Hydrocolloids*, 27(1), 201–207. <https://doi.org/10.1016/j.foodhyd.2011.07.004>
- Vasisht, N. (2014). Selection of Materials for Microencapsulation. In *Microencapsulation in the Food Industry* (pp. 173–180). Elsevier. <https://doi.org/10.1016/b978-0-12-404568-2.00016-9>
- Wang, K., Fan, J., Liu, Y., & He, Z. (2010). Konjac glucomannan and xanthan gum as compression coat for colonic drug delivery: Experimental and theoretical evaluations. *Frontiers of Chemical Engineering in China*, 4(1), 102–108. <https://doi.org/10.1007/s11705-009-0299-x>
- Wang, K., & He, Z. (2002). Alginate-konjac glucomannan-chitosan beads as controlled release matrix. *International Journal of Pharmaceutics*, 244(1–2), 117–126. [https://doi.org/10.1016/S0378-5173\(02\)00324-1](https://doi.org/10.1016/S0378-5173(02)00324-1)
- Wardhani, D. H., Cahyono, H., & Aryanti, N. (2019). Performance of glucomannan-alginate combination as a pH sensitive excipient of vitamin C encapsulation using gelation method. *International Journal of Applied Pharmaceutics*, 11(2), 185–192. <https://doi.org/10.22159/ijap.2019v11i2.28519>
- Wattanaprasert, S., Borompichaichartkul, C., Vaithanomsat, P., & Srzednicki, G. (2017). Konjac glucomannan hydrolysate: A potential natural coating material for bioactive compounds in spray drying encapsulation. *Engineering in Life Sciences*, 17(2), 145–152. <https://doi.org/10.1002/elsc.201600016>
- Wilkowska, A., Ambroziak, W., Czyzowska, A., & Adamiec, J. (2016). Effect of Microencapsulation by Spray-Drying and Freeze-Drying Technique on the Antioxidant Properties of Blueberry (*Vaccinium myrtillus*) Juice Polyphenolic Compounds. *Polish Journal of Food and Nutrition Sciences*, 66(1), 11–16. <https://doi.org/10.1515/pjfn-2015-0015>
- Winarsih, H. (2007). Antioksidan Alami dan Radikal Bebas. In *Cetakan Kelima* (pp. 12,



Yang, J., Xiao, J. X., & Ding, L. Z. (2009). An investigation into the application of konjac glucomannan as a flavor encapsulant. *European Food Research and Technology*, 229(3), 467–474. <https://doi.org/10.1007/s00217-009-1084-2>

Yin, L., Xiaopei, W. U., Yongshun, C., Chongyan, L., Tingting, Y., & Qinghua, C. (2013). *Biological Performances Investigation of KGM / SH fiber membranes*. 738, 61–66. <https://doi.org/10.4028/www.scientific.net/AMR.738.61>

Zhang, C., Chen, J. Da, & Yang, F. Q. (2014). Konjac glucomannan, a promising polysaccharide for OCDDS. *Carbohydrate Polymers*, 104(1), 175–181. <https://doi.org/10.1016/j.carbpol.2013.12.081>

Zuidam, N. J., & Shimoni, E. (2010). Overview of microencapsulates for use in food products and processes. *Encapsulation Technologies for Active Food Ingredients and Food Processing*, 3–29. https://doi.org/10.1007/978-1-4419-1008-0_2

51