

DAFTAR PUSTAKA

- Afdhal Saputra, A. M., Ibadurrahman, M., Rahman Piliang, A. F., Marpongahtun, Ong, A. J., Goei, R., Yoong Tok, A. I., Ikhtiari, R., Gea, S., & Zuhra, C. F. (2025). Optimising cellulose nanofiber extraction from water hyacinth (*Eichhornia crassipes*) stems: Effects of steam explosion pretreatment and ultrasonication time. *JCIS Open*, 17(March), 100129. <https://doi.org/10.1016/j.jciso.2025.100129>
- Albuquerque, P. B. S., Cerqueira, M. A., Vicente, A. A., Teixeira, J. A., & Carneiro-da-cunha, M. G. (2017). International Journal of Biological Macromolecules Immobilization of bioactive compounds in Cassia grandis galactomannan-based films: Influence on physicochemical properties. *International Journal of Biological Macromolecules*, 96, 727–735. <https://doi.org/10.1016/j.ijbiomac.2016.12.081>
- Alhariry, J., Kumar, A., Yadav, T. C., Yadav, E., Prasad, R., Poluri, K. M., & Gupta, P. (2024). Tyrosol-gold nanoparticle functionalized acacia gum-PVA nanofibers for mitigation of Candida biofilm. *Microbial Pathogenesis*, 193(April), 106763. <https://doi.org/10.1016/j.micpath.2024.106763>
- Amaliah, N., Patra, D., Candra, K. P., & Rahmadi, A. (2021). The Effect of Sugar Palm Fruit (*Arenga pinnata* Merr.) Flour Substitution on Linier Expansion, Chemical and Sensory Properties of Tapioca Crackers. *Jurnal Industri Hasil Perkebunan*, 16(1), 10–17.
- Amelia, M., & Rahmaida, R. (2017). Produktifitas Ilmiah Peneliti Indonesia pada Penelitian Keanekaragaman Hayati Indonesia Berdasarkan Basis Data Scopus 1990-2015. *Jurnal Biologi Indonesia*, 13(2), 241–252. <https://doi.org/10.47349/jbi/13022017/241>
- Anggraini, T., Sayuti, K., Humaira, S. S., Zuhri, A. R., Yenrina, R., & Putra, R. (2026). Effect of Ultrasonication Time on Structural , Morphological , and Functional Properties of Sugar Palm (*Arenga pinnata* Merr .) Flour Nanofibers. 10(1).
- Anova, I. T., & Kamsina, K. (2018). Pengaruh penambahan tepung agar terhadap komposisi kimia serbuk agar dari

- kolang-kaling. *Jurnal Litbang Industri*, 47–52.
- Arditiya, A. H. (2020). Pengolahan Buah Kolang Kaling sebagai upaya Peningkatan Perekonomian Masyarakat Kelurahan Lempake-Kota Samarinda. *Prosiding 4th Seminar Nasional Penelitian & Pengabdian Kepada Masyarakat*, 285–289.
- Barlina, R., Liwu, S., & Manaroinson, E. (2020). Potensi dan Teknologi Pengolahan Komoditas Aren Sebagai Produk Pangan Dan Nonpangan. *Jurnal Penelitian Dan Pengembangan Pertanian*, 39(1), 35.
- Br Tarigan, J., & Purba, D. (2015). Karakterisasi Polisakarida Galaktomanan Kolang Kaling (*Arenga pinnata*) Terikat Silang Fosfat. *Majalah Polimer Indonesia*, 4(1), 1–8.
- Chakraborty, S., Deka, G., & Dutta, H. (2025). Effect of particle size, probe type, position and glassware geometry on laboratory-scale ultrasonic extraction of *Citrus maxima* flavedo. *Food Physics*, 2(September 2024), 100040. <https://doi.org/10.1016/j.foodp.2024.100040>
- Dewi, K. L., Aulina, D. E., Wulandari, F., & Maharani, S. (2022). Modifikasi Pati dengan Fermentasi (*S. cerevisiae*) pada Tepung Pisang, Tepung Ubi Ungu, dan Tepung Ketan Hitam. *EDUFORTECH*, 7(2), 182–200. <https://doi.org/10.17509/EDUFORTECH.V7I2.51624>
- Dutta, K., & Nath, R. (2024). Application of Colorimetry in Food Industries. *Advances in Colorimetry*, November 2023. <https://doi.org/10.5772/intechopen.112099>
- El-newehy, M. H., El-hamshary, H., & Salem, W. M. (2021). Solution blowing spinning technology towards green development of urea sensor nanofibers immobilized with hydrazone probe. *Polymers*, 13(4), 1–14. <https://doi.org/10.3390/polym13040531>
- Fitriana, T., Nur'utami, D. A., & Shapariah, R. (2019). KARAKTERISTIK FISIKOKIMIA SERBUK KOLANG KALING (*Arenga pinnata* Merr) BERDASARKAN VARIASI PERENDAMAN. *Jurnal Agroindustri Halal*, 5(1), 104–112. <https://doi.org/10.30997/jah.v5i1.1697>
- Fons, B., Louise, B., Decker, A., Sousa, E., Brito, D., Rodrigues, S., Regina, L., & Mariutti, B. (2023). *Microencapsulation of anthocyanins as natural dye extracted from fruits – A systematic review*. 424(May).

- <https://doi.org/10.1016/j.foodchem.2023.136361>
- Gabriel, H. G., García-sifuentes, C. O., Argüelles-monal, W. M., & Lizardi-mendoza, J. (2024). *Heliyon Enzyme-catalyzed transesterification of galactomannan extracted from mesquite seed (Prosopis velutina) with vinyl carboxylate esters.* 10(December 2023).
<https://doi.org/10.1016/j.heliyon.2024.e31421>
- Gadelrab, K., Kech, A., & Cruz, C. (2026). Atomistic modeling of the hygromechanical properties of amorphous Polyamide 6,6. *Journal of Physical Chemistry B*, 130(11), 1–18.
- Gokulakrishnan B, Praveen S, Subash B, Karthick K, & Sakthivel B. (2023). Fabrication of Ultra Sonic Probe Sonicator – a Review. *International Journal of Trendy Research in Engineering and Technology*, 07(06), 01–04.
<https://doi.org/10.54473/ijtret.2023.7601>
- Gupta, P., Mishra, P., Verma, N., Alhariry, J., Kumar, C., Prasad, R., & Poluri, K. M. (2024). Assessing the eradication potential of fungal biofilms using acacia gum/PVA nanofibers functionalized with geraniol- β cyclodextrin inclusion complex. *Journal of Drug Delivery Science and Technology*, 91(November 2023), 105186.
<https://doi.org/10.1016/j.jddst.2023.105186>
- Hailu, G. G., & Admassu, H. (2024). Potential stabilization effect of native and modified anchote (*Coccinia abyssinica*) starches in tomato sauce. *International Journal of Food Properties*, 27(1), 12–33.
<https://doi.org/10.1080/10942912.2023.2293658>
- Hanhadyanaputri, E. S., Wulan, A. H., Sulistyarini, I., & Cahyani, I. M. (2023). Perbedaan Aktivitas Antioksidan Pada Kolang Kaling Segar Dan Kolang Kaling Serbuk. *Jurnal Insan Farmasi Indonesia*, 6(3), 175–183.
<https://doi.org/10.36387/jifi.v6i3.1704>
- Hasibuan, H. S., Wisnubroto, M. P., Edwin, E., Rezki, D., & Yulistriani, Y. (2023). Identification and Morphological Characterization of Sugar Palm Plants (*Arenga pinnata* Merr.) Growing on Different Altitudes. *Jurnal Budidaya Pertanian*, 19(2), 99–105.
<https://doi.org/10.30598/jbdp.2023.19.2.99>
- Hidayah, R., Asterina, A., & Afriwardi, A. (2017). Hubungan

- Tingkat Pendidikan dan Pengetahuan Penjual Es Campur Tentang Zat Pewarna Berbahaya dengan Kandungan Rhodamin B dalam Buah Kolang Kaling di Kota Padang. *Jurnal Kesehatan Andalas*, 6(2), 283. <https://doi.org/10.25077/jka.v6i2.692>
- Hussin, A. S. M., Che Wan Sapawi, C. W. N. S., Anzian, A., & Ramli, H. B. (2017). Aqueous extraction, purification and characterization of galactomannans from Aren sugar palm (*Arenga pinnata*) fruits. *International Journal on Advanced Science, Engineering and Information Technology*, 7(4), 1148–1154. <https://doi.org/10.18517/ijaseit.7.4.1760>
- Ihsan, F., & Anggraini, A. (2023). Physicochemical Characterization and FTIR Analysis of Galactomannan from Sugar Palm Fruit (*Arenga pinnata* Merr.). *JURAGAN - Jurnal Agroteknologi*, 1(1), 1–6. <https://doi.org/10.58794/juragan.v1i1.460>
- Ishak, R., Amiruddin, A., Dunggio, S., & Abdussamad, S. (2023). Pengolahan Buah Aren Menjadi Produk Kolang-Kaling di Desa Kopi Kecamatan Bulango Utara Kabupaten Bone Bolango. *Jurnal Pengabdian Pada Masyarakat*, 1(1), 01–07. <https://doi.org/10.37905/ejppm.v1i1.3>
- Jiang, Y., Liu, X., Yang, Q., Song, X., Qin, C., Wang, S., & Li, K. (2019). Effects of residual lignin on composition, structure and properties of mechanically defibrillated cellulose fibrils and films. *Cellulose*, 26(3), 1577–1593. <https://doi.org/10.1007/s10570-018-02229-4>
- Juhász, A. E., Greff, D., Teutsch, B., Gede, N., Hegyi, P., Horváth, E. M., Deák, P., Nyirády, P., Ács, N., & Juhász, R. (2023). Galactomannans are the most effective soluble dietary fibers in type 2 diabetes: a systematic review and network meta-analysis. *American Journal of Clinical Nutrition*, 117(2), 266–277. <https://doi.org/10.1016/j.ajcnut.2022.12.015>
- Kenry, & Lim, C. T. (2017). Nanofiber technology: current status and emerging developments. *Progress in Polymer Science*, 70, 1–17. <https://doi.org/10.1016/j.progpolymsci.2017.03.002>
- Khazraji, A. C., & Robert, S. (2013). Interaction Effects between Cellulose and Water in Nanocrystalline and Amorphous

- Regions : A Novel Approach Using Molecular Modeling. *Journal of Nanomaterials*, 2013(1), 1–10. <https://doi.org/10.1155/2013/409676>
- Lapčíková, B., Lapčík, L., Valenta, T., Majar, P., & Ondroušková, K. (2021). Effect of the rice flour particle size and variety type on water holding capacity and water diffusivity in aqueous dispersions. *LWT*, 142(February).
- Lavudi, H. N., Kottapalli, S., & Goycoolea, F. M. (2018). Extraction and physicochemical characterization of galactomannans from *Dichrostachys cinerea* seeds. *Food Hydrocolloids*, 82, 451–456. <https://doi.org/10.1016/j.foodhyd.2018.04.031>
- Lee, D., Oh, Y., Jin, J. Y., Yi, W., & Park, T. (2020). Rheological Study of Cellulose Nanofiber Disintegrated by a Controlled High-Intensity Ultrasonication for a Delicate Nanofibrillation. *Cellulose*, 4. <https://doi.org/10.1007/s10570-020-03410-4>
- Lin, W., Duan, X., He, S., Wang, J., & Wang, S. (2025). Molecular Dynamics Simulation Study of Ultrasound Induced Cavitation. *Ultrasonics Sonochemistry*, 120(June), 107445. <https://doi.org/10.1016/j.ultsonch.2025.107445>
- Liu, X., Sun, H., Mu, T., Laure, M., & Li, M. (2023). Preparation of cellulose nanofibers from potato residues by ultrasonication combined with high-pressure homogenization. *Food Chemistry*, 413(September 2022), 135675. <https://doi.org/10.1016/j.foodchem.2023.135675>
- Mahardiani, L., Damayanti, N., Maharani, R. D., Saputro, S., Susilowati, E., Ciptonugroho, W., & Nurhayati, N. D. (2023). MODIFICATION OF POLYETHYLENE GLYCOL AND CITRIC ACID ON PALM FIBER WASTE NANOFIBERS ON THE ADSORPTION OF VIOLET CRYSTAL DYES. 8(3), 371–383. <https://doi.org/10.20961/jkpk.v8i3.80105>
- Manambangtua, A. P., Hutapea, R. T. P., & Wungkana, J. (2018). ANALISIS USAHATANI AREN (*Arenga pinnata* Merr) DI KOTA TOMOHON, SULAWESI UTARA. *Jurnal Sosial Ekonomi Pertanian*, 14(1), 85. <https://doi.org/10.20956/jsep.v14i1.3626>
- Maryam, Kasim, A., Novelina, & Emriadi. (2020). Preparation

- and characterization of sago (metroxylon sp.) Starch nanoparticles using hydrolysis-precipitation method. *Journal of Physics: Conference Series*, 1481(1). <https://doi.org/10.1088/1742-6596/1481/1/012021>
- Montoya-escobar, N., Ospina-acero, D., Andr, J., Catalina, G., Felisinda, P., Rojo, G., Maria, L., Escobar, J. P., Correa-hincapi, N., Triana-ch, O., Gallego, R. Z., & Stefani, P. M. (2022). *Use of Fourier Series in X-ray Diffraction (XRD) Analysis and Fourier-Transform Infrared Spectroscopy (FTIR) for Estimation of Crystallinity in Cellulose from Different Sources.*
- Mustaqimah, Fasriyanda, M. H., Ridha, M., Fatha, A., & Khairi. (2024). Potensi Dan Produktivitas Air Nira Dan Kolang Kaling Dalam Perkembangan Ekonomi Masyarakat Di Gampong Mata Ie Kecamatan Darul Imarah Kabupaten Aceh Besar. *Pengabdian Masyarakat*, 5(3).
- Nafisah, A. R., Rahmawati, D., & Tarmidzi, F. M. (2022). Indonesian Journal of Chemical Science Synthesis of Cellulose Nanofiber from Palm Oil Empty Fruit Bunches Using Acid Hydrolysis Method. *Indonesian Journal of Chemical Science*, 11(3), 233–240.
- Ningsih, L. F. (2018). *Rancang Bangun Sistem Kontrol Jarum Spinneret dan Kolektor pada Electrospinning.*
- Nisa, A., & Agustin, S. (2025). PENGARUH WAKTU ULTRASONIKASI TERHADAP KARAKTERISTIK TEPUNG JELAI (COIX LACRYMA-JOBI L). *Jambura Journal of Food Technology*, 7, 177–187.
- Prasetyo, K. W. (2020). APLIKASI NANOTEKNOLOGI DALAM INDUSTRI HASIL HUTAN (Application Of Nanotechnology In Forest Products Industry). *Jurnal Akar*, 9(1), 13–24. <https://doi.org/10.36985/jar.v9i1.189>
- Purwati, & Nugrahini, T. (2017). *Jurnal Abdimas Mahakam. Pemanfaatan Buah Kolang Kaling Dari Hasil Perkebunan Sebagai Pangan Fungsional*, 2(1), 25.
- Putri, D. K. (2023). Pengaruh Waktu Sonikasi Terhadap Ukuran Partikel, Indeks Polidispersitas Dan Zeta Potensial Pada Fitosom Ekstrak Teh Hijau. *Indonesian Journal of Health Science*, 3(2a), 403–408. <https://doi.org/10.54957/ijhs.v3i2a.581>

- Rahayu, A. A. D., Leksono, B., Asmaliyah, Krisnawati, Rianawati, H., Umroni, A., Haryjanto, L., Widyatmoko, A. Y., Putri, A. I., Sudomo, A., Hani, A., Octavia, D., Andini, S., Khotimah, H., Mudhofir, M. R. T., Anggadhanita, L., Winarni, I., Astarini, I. A., Artati, Y., & Baral, H. (2025). The potential of *Arenga pinnata* (Wurmb) Merr. for enhancing soil health, food, energy, and water security in Indonesia: A comprehensive review. *Trees, Forests and People*, 20(February), 100808. <https://doi.org/10.1016/j.tfp.2025.100808>
- Ridanti, C., Dharmono, & Riefani, M. K. (2022). Kajian Etnobotani Aren (*Arenga pinnata* Merr.) Di Desa Sabuhur Kecamatan. *JUPEIS: Jurnal Pendidikan Dan Ilmu Sosial*, 1(3), 200–215. <https://jurnal.jomparnd.com/index.php/jp>
- Saman, W. R., Ahmad, L., Isra, M., Ngadi, F., Djama, A., Datau, F., Junus, S. I. Z., Jenggu, H. A., Usman, N. Y., Sari, N. P., & Marwan, A. P. P. (2024). Modifikasi Tepung Jagung Pulut Dan Sorgum Dengan Metode HMT (Heat Moisture Treatment). *Jambura Journal of Food Technology*, 6(1), 141–150. <https://doi.org/10.37905/jjft.v6i1.26035>
- Sayuti, K., Yenrina, R., & Anggraini, T. (2017). Characteristics of “Kolang-kaling” (Sugar palm fruit jam) with added natural colorants. *Pakistan Journal of Nutrition*, 16(2), 69–76. <https://doi.org/10.3923/pjn.2017.69.76>
- Sharma, A., Mandal, T., & Goswami, S. (2021). Dispersibility and Stability Studies of Cellulose Nanofibers: Implications for Nanocomposite Preparation. *Journal of Polymers and the Environment*, 29(5), 1516–1525. <https://doi.org/10.1007/s10924-020-01974-7>
- Sinulingga, B. O. (2020). Pengaruh konsumsi serat dalam menurunkan kadar kolesterol. *Jurnal Penelitian Sains*, 22(1), 9–15. <http://ejurnal.mipa.unsri.ac.id/index.php/jps/article/download/556/554>
- Sundari, U. Y., Saputera, Andanu, O., Setyowati, E. D., & Kalalinggi, S. Y. (2023). Optimum Parameter for Electrospinning of Nanofiber. *Journal of Peat Science and Innovation*, 2(1), 1–5. <https://doi.org/10.59032/jpsi.v2i1.8270>
- Tarigan, J. B., & Siregar, M. H. (2020). *Synthesis Succinic*

- Galactomannan from Galactomannan Arenga pinnata Merr. and Succinic Anhydride using Microwave Method*. 1, 69–73.
<https://doi.org/10.5220/0008854200690073>
- Widyaningsih, M. M. K., Purwijantiningsih, E., & Swasti, Y. R. (2021). KUALITAS ES KRIM YOGHURT SINBIOTIK DENGAN VARIASI TEPUNG KOLANG-KALING (*Arenga pinnata* Merr.). *Jurnal Sains Dan Teknologi Pangan*, 6(3). <https://doi.org/10.33772/jstp.v6i3.12582>
- Wijaya, M., Kasim, A., & Kasim, F. (2025). Preparation of Celery Leaf Extract, Phytochemical Screening, and Nanoparticle Formulation in Antiaging Cream Development. *AJARCDE (Asian Journal of Applied Research for Community Development and Empowerment)*, 9(1), 121–125.
<https://doi.org/10.29165/ajarcde.v9i1.615>
- Yanti, Madriena, & Ali, S. (2017). Cosmeceutical effects of galactomannan fraction from *Arenga pinnata* fruits in vitro. *Pharmacognosy Research*, 9(1), 39–45.
<https://doi.org/10.4103/0974-8490.199773>
- Ye, L., Zhu, X., & Liu, Y. (2019). Numerical Study on Dual-frequency Ultrasonic Enhancing Cavitation Effect Based on Bubble Dynamic Evolution. *Ultrasonics - Sonochemistry*, 59(May), 104744.
<https://doi.org/10.1016/j.ultsonch.2019.104744>
- Zhuang, X., Gong, W., Wang, F., & Hu, X. (2025). Ultrasonic-assisted refinement of domesticated-wild silk protein composite nanofibers: enhancing miscibility, uniformity, and functionality via ionic liquid processing. *Ultrasonics Sonochemistry*, 120(April).
<https://doi.org/10.1016/j.ultsonch.2025.107480>