

DAFTAR PUSTAKA

- Abdillah, M. (2022). Characterization and Modification of Corn Starch (*Zea mays* [L.]) and HPMC with Sodium Tripolyphosphate as Crosslinking Agent. *Urecol Journal. Part C: Health Sciences*, 2(2), 35. <https://doi.org/10.53017/ujhs.170>
- Adawiyah, D. R., Akuzawa, S., Sasaki, T., & Kohyama, K. (2017). A comparison of the effects of heat moisture treatment (HMT) on rheological properties and amylopectin structure in sago (*Metroxylon sago*) and arenga (*Arenga pinnata*) starches. *Journal of Food Science and Technology*, 54, 3404–3410.
- Adebowale, K. O., Owolabi, B. I. O., Olayinka, O. O., & Lawal, O. S. (2015). Effect of heat Moisture Treatment and Annealing on Physicochemical Properties of Red Sorghum Starch. *African Journal of Biotechnology*, 4(9), 928-933
- Ai, Y., & Jane, J. (2018). Understanding Starch Structure and Functionality. *Starch in Food*, 151–178. doi:10.1016/b978-0-08-100868-3.00003-2
- Akasapu, K., Ojah, N., Gupta, A. K., Choudhury, A. J., & Mishra, P. (2020). An innovative approach for iron fortification of rice using cold plasma. *Food Research International*, 136 (April), 109599.
- Almeida, F., Gomes, W., Cavalcante, R., Tiwari, B., Cullen, P., Frias, J., Bourke, P., Fernandes, F, & Rodrigues, S. (2017). Fructooligosaccharides integrity after atmospheric cold plasma and high-pressure processing of a functional orange juice. *Food Res. Int.*, 102, 282–290.
- Ambarwati, K., Syamsir, E., & Yasni, S. (2022). Karakteristik Mi Berbasis Ubi Jalar dengan Substitusi Pati Sagu atau Pati Ubi Banggai. *Jurnal Teknologi Dan Industri Pangan*, 33(1), 11–20. doi:10.6066/jtip.2022.33.1.11
- Anggreini, A., Choiriyah, N. A., & Athennia, A. (2021). Modification of Sorghum bicolor (L) Moench Starch : Review of HMT (Heat Moisture Treatment), Autoclaving Coolin , and Annealing Methods. 3(2), 57–66.
- Anindya, A., & Hariyadi. (2014). Oksidasi Hancuran Singkong Menggunakan H₂O₂ dan Asam Laktat dengan Katalisator *Ferrous Sulfate Heptahydrate* untuk Meningkatkan *Baking Expansion*. *Jurnal Aplikasi Teknologi Pangan* 3 (4) 2014.
- Anugrahati, N. A., & Yudianto, C. M. (2022). Pengaruh rasio tepung Garut hasil HMT dan *xanthan gum* terhadap daya serap air dan *cooking loss* mi laksa.

Agrointek : Jurnal Teknologi Industri Pertanian, 16(3), 396–402.
<https://doi.org/10.21107/agrointek.v16i3.13350>

- Atrous, H., Benbettaieb, N., Chouaibi, M., Attia, H., & Ghorbel, D. (2017). Changes in wheat and potato starches induced by gamma irradiation: A comparative macro and microscopic study. *International Journal of Food Properties*, 20(7), 1532–1546.
- Badan Standar Nasional. (2011). SNI 3451:2011. Tapioka. Jakarta: Departemen Perindustrian.
- Badan Standardisasi Nasional. (2018). SNI 8523-2018 tentang Pati Jagung. Jakarta: Departemen Perindustrian.
- Bahmanpour, H., Asefi, N., Alizadeh, A., & Pirs, S. (2024). Assessment of the impact of cold plasma technology on physicochemical properties of corn starch flour and the associated modified corn starch incorporated into milk dessert. *Heliyon*, 10(17), e37399. doi:10.1016/j.heliyon.2024.e37399
- Bahrami, R., Zibaei, R., Hashami, Z., Hasanvand, S., Garavand, F., Rouhi, M., Jafari, S., & Mohammadi, R. (2020). Modification and improvement of biodegradable packaging films by cold plasma; A critical review. *Crit. Rev. Food Sci. Nutr.*, 1–15.
- Banura, S., Thirumdas, R., Kaur, A., Deshmukh, R. R., & Annapure, U. S. (2018). Modification of starch using low pressure radio frequency air plasma. *LWT Food Science and Technology*, 89, 719–724. doi:10.1016/j.lwt.2017.11.056
- Bie, P., Li, X., Xie, F., Chen, L., Zhang, B., & Li, L. (2016). Supramolecular structure and thermal behavior of cassava starch treated by oxygen and helium glow-plasmas. *Innovative Food Science and Emerging Technologies*, 34, 336–343. <https://doi.org/10.1016/j.ifset.2016.03.005>
- Bie, P., Pu, H., Zhang, B., Su, J., Chen, L., & Li, X. (2016). Structural characteristics and rheological properties of plasma-treated starch. *Innovative Food Science & Emerging Technologies*, 34, 196–204. doi:10.1016/j.ifset.2015.11.019
- Brandenburg, R. (2018). Corrigendum: dielectric barrier discharges: progress on plasma sources and on the understanding of regimes and single filaments. *Plasma Sources Sci. Technol.* 27, 079501 <https://doi.org/10.1088/1361-6595/aaced9>
- Boonkor, P., Sagis, L. M. C., & Lumdubwong, N. (2022). Pasting and Rheological Properties of Starch Paste/Gels in a Sugar-Acid System. *Foods*, 11(24). doi:10.3390/foods11244060

- Brasoveanu, M., & Nemtanu, M. R. (2020). Pasting properties modeling and comparative analysis of starch exposed to ionizing radiation. *Radiation Physics and Chemistry*, 168, 108492. doi:10.1016/j.radphyschem.2019.10
- Cabrera-Canales, Z. E., Velazquez, G., Rodriguez-Marín, M. L., Mendez-Montevalvo, G., Hernandez-Avila, J., Morales-Sanchez, E. & Gomez-Aldapa, C.A. (2020). Dual modification of achira (*Canna indica* L) starch and the effect on its physicochemical properties for possible food applications. *Journal of Food Science and Technology*, 58(3), 952-961. <https://doi.org/10.1007/s13197-020-04609-w>
- Carissimi, M., Flores, S. H., & Rech, R. (2018). Effect of microalgae addition on active biodegradable starch film. *Algal Research*, 32, 201–209. <https://doi.org/10.1016/j.algal.2018.04.001>.
- Carvalho, A. P. M. G., Barros, D. R., da Silva, L. S., Sanches, E. A., Pinto, C. da C., de Souza, S. M., Clerici, M. T. P. S., Rodrigues, S., Fernandes, F. A. N., & Campelo, P. H. (2021). Dielectric barrier atmospheric cold plasma applied to the modification of Ariá (*Goeppertia allouia*) starch: Effect of plasma generation voltage. *International Journal of Biological Macromolecules*, 182, 1618–1627.
- Castanha, N., Matta Junior, M. D., & Augusto, P. E. D. (2017). Potato starch modification using the ozone technology. *Food Hydrocolloids*, 66, 343–356. doi:10.1016/j.foodhyd.2016.12.00
- Chaiwat, W., Wongsagonsup, R., Tangpanichyanon, N., Jariyaporn, T., Deeyai, P., & Suphantharika, M. (2016). Argon plasma treatment of tapioca starch using a semi- continuous downer reactor. *Food and Bioprocess Technology*, 9, 1125–1134.
- Chan, H., Leh, C., Bhat, R., Senan, C., Williams, P., & Karim, A. (2011). Molecular structure, rheological and thermal characteristics of ozone oxidized starch. *Food chemistry*, 126, 1019-1024.
- Chang, R., Lu, H., Tian, Y., Li, H., Wang, J., & Jin, Z. (2020). Structural modification and functional improvement of starch nanoparticles using vacuum cold plasma. *International Journal of Biological Macromolecules*, 145, 197–206. <https://doi.org/10.1016/j.ijbiomac.2019.12.167>
- Chaple, S., Sarangapani, C., Jones, J., Carey, E., Causeret, L., Genson, A., & Bourke, P. (2020). Effect of atmospheric cold plasma on the functional properties of whole wheat (*Triticum aestivum* L.) grain and wheat flour. *Innovative Food Science & Emerging Technologies*, 102529.

- Chen, H. (2014). Investigation of properties of long-grain brown rice by low-pressure plasma, *Food Bioprocess Technol.* 7:2484–2491, <https://doi.org/10.1007/s11947-013-1217-2>
- Chen, H. H., Chen, Y. K., & Chang, H. C. (2012). Evaluation of physicochemical properties of plasma treated brown rice. *Food Chemistry*, 135(1), 74–79.
- Chen, X., Yao, W., Gao, F., Zheng, D., Wang, Q., Cao, J., Tan, H., & Zhang, Y. (2021). Physicochemical properties comparative analysis of corn starch and cassava starch, and comparative analysis as adhesive. *Journal of Renewable Materials*, 9(5), 789–992. <https://doi.org/10.32604/jrm.2021.014751>
- Chisenga, S. M., Workneh, T. S., Bultosa, G., & Laing, M. (2019). Characterization of physicochemical properties of starches from improved cassava varieties grown in Zambia. *AIMS Agriculture and Food*, 4(4), 939–966. doi: 10.3934/agrfood.2019.4.939
- Chizoba Ekezie, F. G., Sun, D., & Cheng, J. (2017). A review on recent advances in cold plasma technology for the food industry: current applications and future trends. *Trends Food Sci. Technol.* 69, 46–58. <https://doi.org/10.1016/j.tifs.2017.08.007>
- Choiriyah, N., Benita, A., & Sundjaja, A. (2020). Modifikasi Pati Biji Nangka Secara Fisik Dan Kimia. *Agritech: Jurnal Fakultas Pertanian Universitas Muhammadiyah Purwokerto*, 22(2), 88. doi:10.30595/agritech.v22i2.7914
- Compart, J., Singh, A., Fettke, J., & Apriyanto, A. (2023). Customizing Starch Properties: A Review of Starch Modifications and Their Applications. *Polymers*, 15(16). <https://doi.org/10.3390/polym15163491>
- Cornejo, F., Maldonado-Alvarado, P., Palacios, S., Hugo, D., & Rosell, C. M. (2022). Impact of Cassava Starch Varieties on the Physiochemical Change during Enzymatic Hydrolysis. *Molecules*, 27(18), 1–12. <https://doi.org/10.3390/molecules27186098>
- Danimayostu, A. A., Shofiana, N. M., & Permatasari, D. (2017). Pengaruh Penggunaan Pati Kentang (*Solanum tuberosum*) Termodifikasi Asetilasi-Oksidasi sebagai *Gelling agent* terhadap Stabilitas Gel Natrium Diklofenak. *Journal of International Society of Preventive and Community Dentistry*, 3(1), 25–32.
- Deeyai, P., Suphantharika, M., Wongsagonsup, R., & Dangtip, S. (2013). Characterization of modified tapioca starch in atmospheric argon plasma under diverse humidity by FTIR spectroscopy. *Chinese Physics Letters*, 30, 018103.

- De La Hera, E., Gomez, M., & Rosell, C. M. (2013). Particle size distribution of rice flour affecting the starch enzymatic hydrolysis and hydration properties. *Carbohydrate Polymers*, 98(1), 421–427. <https://doi.org/10.1016/j.carbpol.2013.06.002>
- Deng, J., Bolgazy, A., Wang, X., Zhang, M., Yang, Y., & Jiang, H. (2024). The properties of potato starch with different moisture content treated by cold plasma: Structure, physicochemical and digestive properties. *International Journal of Biological Macromolecules*: 282(6).
- Dewi, A., & Tethool, E. (2019). Karakterisasi Sifat Fisikokimia Tapioka Teroksidasi dan Aplikasinya Untuk Pembuatan Edible Film. *Prosiding SNST ke-10 Tahun 2019 Fakultas Teknik Universitas Wahid Hasyim* 19. 2001, 19–24
- Du, C., Jiang, F., Jiang, W., Ge, W., & Du, S. (2020). Physi-cochemical and structural properties of sago starch. *Int J Biol Macromol* 164: 1785–1793. <https://doi.org/10.1016/j.ijbiomac.2020.07.310>
- El-Sheikh, M., Ramadan, & El-Shafie, A. (2010). Photo-oxidation of Rice Starch Part I: Using Hydrogen Peroxide. *Carbohydrate Polymers*. 80: 266–269.
- Endah, M., Satmalawati, M., Paramita, B. L., & Nino, J. (2024). Karakteristik Fisikokimia dan Sifat Fungsional Pati Alami Ubi Kayu Hasil Ekstraksi Secara Sederhana. *Jurnal Teknologi Pertanian*, 13(1), 55–64.
- Erika, C. (2010). Produksi Pati Termodifikasi dari Beberapa Jenis Pati. *Jurnal Rekayasa Kimia dan Lingkungan*, Vol 7 No. 3: 130 - 137.
- Fernandes, F. A. N. (2021). Cold Plasma Processing on Fruits and Fruit Juices : A Review on the Effects of Plasma on Nutritional Quality. *Processes* 2021, 9, 2098. <https://doi.org/10.3390/pr9122098>
- Fitriani, S. (2018). Daya Pembengkakan serta Sifat Pasta dan Termal Pati Sagu, Pati Beras dan Pati Ubi Kayu. *Jurnal Teknologi dan Industri Pangan* 3(1): 41–48.
- Fitriani, S., Yusmarini, Y., Riftyan, E., Saputra, E., & Rohmah, M. C. (2023). Karakteristik dan Profil Pasta Pati Sagu Modifikasi Pragelatinisasi pada Suhu yang Berbeda. *Jurnal Teknologi Hasil Pertanian*, 16(2), 104. <https://doi.org/10.20961/jthp.v16i2.56057>
- Fonseca, L., Goncalves, J., El Halal, S., Pinto, V., Dias, A., Jacques, A., & Zavarezeb, E. (2015). Oxidation of potato starch with different sodium hypochlorite concentrations and its effect on biodegradable films. *LWT Food Sci. Technol.* 60, 714–720.

- Fonseca, L., Halal, S., Dias, A., & Zavareze, E. (2021). Physical modification of starch by heat-moisture treatment and annealing and their applications: A review. *Carbohydrate Polymers*, 274(June), 118665. <https://doi.org/10.1016/j.carbpol.2021.118665>
- Gao, S., Liu, H., Sun, L., Liu, N., Wang, J., Huang, Y., Wang, F., Cao, J., Fan, R., Zhang, X., & Wang, M. (2019). The effects of dielectric barrier discharge plasma on physicochemical and digestion properties of starch. *International Journal of Biological Macromolecules*, 138, 819–830. <https://doi.org/10.1016/j.ijbiomac.2019.07.147>
- Gebremical, G. G., Tappi, S., Laurita, R., Capelli, F., Drudi, F., Romani, S., & Rocculi, P. (2024). Effects of incubation time of plasma activated water (PAW) combined with annealing for the modification of functional properties of potato starch. *Food Bioscience*, 59 (April), 104247. <https://doi.org/10.1016/j.fbio.2024.104247>
- Ge, X., Guo, Y., Zhao, J., Zhao, J., Shen, H., & Yan, W. (2022). Dielectric barrier discharge cold plasma combined with cross-linking: An innovative way to modify the multi-scale structure and physicochemical properties of corn starch. *Int. J. Biol. Macromol.* 215, 465–476.
- Ge, X., Shen, H., Su, C., Zhang, B., Zhang, Q., Jiang, H., & Li, W. (2021). The improving effects of cold plasma on multi-scale structure, physicochemical and digestive properties of dry heated red adzuki bean starch. *Food Chemistry*, 129159. <https://doi.org/10.1016/j.foodchem.2021.129159>
- Ge, X., Shen, H., Su, C., Zhang, B., Zhang, Q., Jiang, H., & Li, W. (2021). Pullulanase modification of granular sweet potato starch: Assistant effect of dielectric barrier discharge plasma on multi-scale structure, physicochemical properties. *Carbohydrate Polymers*, 272, 118481. [doi:10.1016/j.carbpol.2021.118481](https://doi.org/10.1016/j.carbpol.2021.118481)
- Goiana, M. L., & Fernandes, F. A. N. (2023). Influence of Dielectric Barrier Discharge Plasma Treatment on Corn Starch Properties. *Processes*, 11(7). <https://doi.org/10.3390/pr11071966>
- Goiana, M., Mattos, A., Rosa, M. de F., & Fernandes, F. (2024). Use of Cold Plasma as an Alternative to Improve Corn Starch-Based Films: Effect of the Plasma Application Strategy. *Processes*, 12(7), 1–13. <https://doi.org/10.3390/pr12071429>
- Golkar, A., Milani, J., Motamedzadegan, A., & Kenari, R. (2022). Modification of corn starch by thermal-ultrasound treatment in presence of Arabic gum. *Scientific Reports*, 12(1), 1–11. [doi:10.1038/s41598-022-23836-z](https://doi.org/10.1038/s41598-022-23836-z)

- Grgic, I., Ackar, D., Barisic, V., Vlajinac, M., & Knezevic, M, Z. (2019). Nonthermal methods for starch modification—A review. *Journal of Food Processing and Preservation*, 43(12), e14242. <https://doi.org/https://doi.org/10.1111/jfpp.14242>
- Guo, Z., Gou, Q., Yang, L., Yu, Q. li, & Han, L. (2022). Dielectric barrier discharge plasma: A green method to change structure of potato starch and improve physicochemical properties of potato starch films. *Food Chemistry*, 370, 130992. <https://doi.org/10.1016/j.foodchem.2021.130992>
- Gupta, R., Guha, P., & Srivastav, P. (2024). Effect of cold plasma treatment and plasma-activated water on physicochemical and structural properties of starch: A green and novel approach for environmental sustainability. *Plasma Processes and Polymers*, 21(4).
- Handarini, K., Hamdani, J., Cahyana, Y., & Setiasih, I. (2020). Functional, thermal, and molecular properties of ozonated starches. *IOP Conference Series: Earth and Environmental Science*, 443(1). <https://doi.org/10.1088/1755-1315/443/1/012102>
- Han, Z., Shi, R., & Sun, D. (2020). Effects of novel physical processing techniques on the multi-structures of starch. *Trends in Food Science & Technology*, 97, 126–135.
- Hardoko, Tasia, C., & Mastuti, T. (2021). Pembuatan mi singkong: karakterisasi mi singkong hasil penambahan jenis protein dan rasio tepung singkong terhadap tapioka. *Jurnal Sains Dan Teknologi*, 5(1), 58–72. <https://ojs.uph.edu/index.php/FaSTJST/article/view/3392>
- Hardwianti, R., Primaniyarta, M., & Palupi, N. (2014). Konsistensi Mutu Pilus Tepung Tapioka: Identifikasi Parameter Utama Penentu Kerenyahan Quality Consistency of Tapioca Starch Pilus: Identification of Main Parameters for Crispiness. *Jurnal Mutu Pangan*, 1(2), 91–99.
- Hartati, Rahman, N., Ajie, F. T., & Hartati, N. S. (2020). Variation of cassava genotypes based on physicochemical properties of starches and resistant starch content. *IOP Conference Series: Earth and Environmental Science*, 439(1). <https://doi.org/10.1088/1755-1315/439/1/012048>
- Haryani, K., Hadiyanto, H., & Handayani, N. 2015. Sifat Fisikokimia Pati Sorghum Varietas Merah dan Putih Termomodifikasi *Heat Moisture Treatment* (HMT) untuk Produk Bihun Berkualitas. *Prosiding Seminar Nasional Teknik Kimia “Kejuangan”*, UPN Veteran, Yogyakarta.

- Haryani, K., Siregar, A., & Larasati, D. L. (2020). Modifikasi Pati Sorgum (*Sorgum bicolor* L.) dengan Metode Oksidasi Menggunakan Hidrogen Peroksida. *Inovasi Teknik Kimia*, 5(2), 98–101.
- Haryanti, P., Setyawati, R., & Wicaksono, R. (2014). Pengaruh Suhu Dan Lama Pemanasan Suspensi Pati Serta Konsentrasi Butanol Terhadap Karakteristik Fisikokimia Pati Tinggi Amilosa Dari Tapioka. *Jurnal Agritech*, 34(03), 308. <https://doi.org/10.22146/agritech.9459>
- Herawati, H. 2012. Teknologi Proses Produksi Food Ingredient Dari Tapioka Termodifikasi. *litbang pertanian*, 31(12), 68–76.
- Hermawati Rahayu, L., Windu, S. R., & Antonius, P. (2017). IbM Kelompok Ibu Rumah Tangga dalam Produksi Tepung. *Jurnal Pengabdian Kepada Masyarakat*, 08(01), 19–29.
- Heydarian, M., Heydarian, A., & Mortazavi, S. A. (2024). The significant effect of cold plasma on the modification of the characteristics of cereal starches. *Journal of Food Science and Technology (Iran)*, 20(144), 25–46. <https://doi.org/10.22034/FSCT.20.144.25>
- Hoque, M., Donagh, C., Tiwari, B. K., Kerry, J. P., & Pathania, S. (2022). Effect of Cold Plasma Treatment on the Packaging Properties of Biopolymer-Based Films: A Review. *Applied Sciences (Switzerland)*, 12(3). <https://doi.org/10.3390/app12031346>
- Hoover, R. (2010). The Impact of Heat-Moisture Treatment on Molecular Structures and Properties of Starches Isolated from Different Botanical Sources. *Critical Reviews in Food Science and Nutrition*, 50(9), 835–847. doi:10.1080/10408390903001735
- Huang, Y., Wang, H., Liu, Q., Zhou, J., Gao, S., Yu, J., Zhang, X., & Wang, M. Comparing impacts of dielectric barrier discharge plasma and electron beam irradiation processing on characteristics of Tartary buckwheat whole flour, *Innovative Food Sci. Emerg. Technol.* 77 (2022) 102986, <https://doi.org/10.1016/j.ifset.2022.102986>
- Hutabarat, D. J. C., & Stevensen, J. (2023). Physicochemical Properties of Enzymatically Modified Starch: A Review. *IOP Conference Series: Earth and Environmental Science*, 1169(1). <https://doi.org/10.1088/1755-1315/1169/1/012093>
- Ibrahim, M. I. J., Sapuan, S. M., Zainudin, E. S., & Zuhri, M. Y. M. (2019). Physical, thermal, morphological, and tensile properties of cornstarch-based films as affected by different plasticizers. *International Journal of Food Properties*, 22(1), 925–941. doi:10.1080/10942912.2019.1618324

- Jaddu, S., Sonkar, S., Seth, D., Dwivedi, M., Pradhan, R. C., Goksen, G., Kumar Sarangi, P., & Rezek Jambrak, A. (2024). Cold plasma: Unveiling its impact on hydration, rheology, nutritional, and anti-nutritional properties in food materials – An overview. *Food Chemistry: X*, 22(January). <https://doi.org/10.1016/j.fochx.2024.101266>
- Jambomias, K. L., Polnaya, F. J., & Ega, L. (2024). Karakteristik Sifat Fisikokimia Pati Gembili (*Dioscorea esculenta* L.) dengan Modifikasi Annealing Characterization of the Physicochemical Properties of Gembili Starch (*Dioscorea esculenta* L.) with Annealing Modification. *Jurnal Agrosilvopasture-Tech*, 3(1), 47–55.
- Kalaivendan, R.G.T., Mishra, A., Eazhumalai, G., & Annapure, U.S. (2022). Effect of atmospheric pressure non-thermal pin to plate plasma on the functional, rheological, thermal, and morphological properties of mango seed kernel starch. *Int. J. Biol. Macromol.* 196, 63–71. <https://doi.org/10.1016/j.ijbiomac.2021.12.013>
- Kartikasari, S. N., Sari, P., & Subagio, A. (2016). Characterization of Chemical Properties, Amylograpic Profiles (RVA) and Granular Morphology (SEM) of Biologically Modified Cassava Starch. *Jurnal Agroteknologi*, 10(1), 12–24.
- Khikmah, N., Muflihati, I., Affandi, A. R., & Nurdyansyah, F. (2021). Sifat Fisik Pati Ganyong Hasil Modifikasi Cross Linking Menggunakan Natrium Asetat. *Metana : Media Komunikasi Rekayasa Proses Dan Teknologi Tepat Guna*, 17(1), 35–40.
- Khorram, S., Zakerhamidi, M.S., & Karimzadeh, Z. (2015). Polarity functions' characterization and the mechanism of starch modification by DC glow discharge plasma. *Carbohydr. Polym.* 2015, 127, 72–78.
- Kooshki, S., Jalal, S., & Reza, H. (2018). Design of new tapered-bed dielectric barrier discharge reactor for atmospheric-pressure plasma modification of starch. *Vacuum*. <https://doi.org/10.1016/j.vacuum.2018.07.006>
- Koswara, S. (2023). Teknologi Modifikasi Pati. Ebook Pangan. Departemen Ilmu dan Teknologi Pangan IPB.
- Krishnakumar, T., & Sajeev, M.S. (2018). Effect of Ultrasound Treatment on Physicochemical and Functional Properties of Cassava Starch. *Int.J.Curr.Microbiol.App.Sci.* 7(10): 3122-3135.
- Kuakpetoon, D., & Wang, Y.-J. (2001). Characterization of Different Starches Oxidized by Hypochlorite. *Starch - Stärke*, 53(5), 211–218.

- Kumar, R., & Khatkar, B. S. (2017). Thermal, pasting and morphological properties of starch granules of wheat (*Triticum aestivum* L.) varieties. *Journal of Food Science & Technology*, 54(8), 1-8.
- Kumar, R., Singh, N., & Khatkar, B. S. (2023). Effects of A- and B-type starch granules on composition, structural, thermal, morphological, and pasting properties of starches from diverse wheat varieties. *Food Bioengineering*, 2(4), 373–383. Doi: 10.1002/fbe2.12068
- Kusnandar, F., Mutmainah, M., & Muhandri, T. (2021). Karakteristik Fisikokimia Pati Ubi Banggai (*Dioscorea alata*). *AgriTECH*, 41(3), 220. <https://doi.org/10.22146/agritech.52535>
- Lastari, A., Anandito, R., & Siswanti, S. (2016). Pengaruh Konsentrasi Natrium Metabisulfit ($\text{Na}_2\text{S}_2\text{O}_5$) Dan Lama Perendaman Terhadap Karakteristik Tepung Kecambah Kedelai. *Jurnal Teknosains Pangan* 5(2):1-8.
- Lee, K. H., Kim, H. J., Woo, K. S., Jo, C., Kim, J. K., Kim, S. H., & Kim, W. H. (2016). Evaluation of cold plasma treatments for improved microbial and physicochemical qualities of brown rice. *LWT-Food Science and Technology*, 73, 442–447.
- Lee, S. J., Hong, J. Y., Lee, E. J., Chung, H. J., & Lim, S. T. (2015). Impact of single and dual modifications on physicochemical properties of japonica and indica rice starches. *Carbohydrate Polymers*, 122, 77–83
- Li, W., Bai, Y., Mousaa, S., Zhang, Q., & Shen, Q. (2012). Effect of high hydrostatic pressure on physicochemical and structural properties of rice starch, *Food Bioprocess Technol.* 5 (2012) 2233–2241.
- Liamlaem, S., Naruenartwongsakul, S., & Intipunya, P. (2022). Effects of Plasma Treatment on Chemical and Physical Properties of Pigmented Rice Flour. 21(4), 1–13.
- Liang, W., Zhang, Q. Duan, H., Zhou, S., Zhou, Y. Li, W. Yan, W. (2023). Understanding CaCl_2 induces surface gelatinization to promote cold plasma modified maize starch: structure-effect relations, *Carbohydr. Polym.* 320121200, <https://doi.org/10.1016/j.carbpol.2023.121200>.
- Liu, H., Fan, H., Cao, R., Blanchard, C., & Wang, M. (2016). Physicochemical properties and in vitro digestibility of sorghum starch altered by high hydrostatic pressure. *International Journal of Biological Macromolecules*, 92, 753–760. doi:10.1016/j.ijbiomac.2016.07.0

- Liu, J., Wang, B., Lina, L., Zhang, J., Liu, W., Xie, J., & Ding, Y. (2014). Functional, physicochemical properties and structure of cross-linked oxidized maize starch. *Food Hydrocolloids*, 36, 45–52.
- Lokeswari, R., Sharanyakanth, P. S., Jaspin, S., & Mahendran, R. (2021). Cold plasma effects on changes in physical, nutritional, hydration, and pasting properties of pearl millet (*Pennisetum Glaucum*). *IEEE Transactions on Plasma Science*, 49(5), 1745–1751.
- Mahdavian Mehr, H., & Koocheki, A. (2020). Effect of atmospheric cold plasma on structure, interfacial and emulsifying properties of Grass pea (*Lathyrus sativus* L.) protein isolate. *Food Hydrocolloids*, 106. <https://doi.org/10.1016/j.foodhyd.2020.105899>
- Mandasari, R., Amanto, B. S., & Ridwan, A. (2015). Kajian Karakteristik Fisik, Kimia, Fisikokimia, dan Sensori Tepung Kentang Hitam Termodifikasi Menggunakan Asam Laktat. *Teknosains Pangan*, 4(3), 1–15. <https://jurnal.uns.ac.id/teknosains-pangan/article/view/4680/4064>
- Marseno, D., Marsono, Y., Pranoto, Y., & Maharani, N. (2023). Teknologi Modifikasi Pati. UGM Press, 27 Des 2023 - 199.
- Marseno, W., Yustinus, M., & Yudi., M. P. (2022). Pati Modifikasi. UGM Press, Yogyakarta.
- Marta, H., Cahyana, Y., Bintang, S., Soeherman, G. P., & Djali, M. (2022). Physicochemical and pasting properties of corn starch as affected by hydrothermal modification by various methods. *International Journal of Food Properties*, 25(1), 792–812.
- Marta, H., Hasya, H., Lestari, Z., Cahyana, Y., Arifin, H., & Nurhasanah, S. (2022). Study of Changes in Crystallinity and Functional Properties of Modified Sago Starch (*Metroxylon* sp.) Using Physical and Chemical Treatment. *Polymers*, 14, 4845. doi: 10.3390/polym14224845
- Maulana, Y. S., Kurniasari, L., & Maharani, F. (2022). Pengaruh Suhu, Konsentrasi Asam Asetat Dan Waktu Terhadap Sifat Fisikokimia (*Swelling Power*, *Solubility*, Derajat Substitusi) Modifikasi Tepung Labu Kuning (*Cucurbita Moschata*) Dengan Proses Asetilasi. *Cendekia Eksakta*, 7(1), 57–61. <https://doi.org/10.31942/ce.v7i1.6607>
- Maulani, Rijanti Rahaju & Hidayat, Asep. (2016). Characterization Of The Functional Properties Of Hydroxypropylated And Cross-Linked Arrowroot Starch In Various Acidic pH Mediums. *IJTech*.1:176-184

- Mauro, R. R., Vela, A. J., & Ronda, F. (2023). Impact of Starch Concentration on the Pasting and Rheological Properties of Gluten-Free Gels. Effects of Amylose Content and Thermal and Hydration Properties. *Foods*, 12(12). <https://doi.org/10.3390/foods12122281>
- Milella, A., & Palumbo, F. (2014). Cold plasma. In: Drioli, E., Giorno, L. (Eds.), *Encyclopedia of Membranes*. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 1–2. https://doi.org/10.1007/978-3-642-40872-4_1107-1
- Misra, N. N., Schlüter, O., & Cullen, P. J. (2016). Plasma in Food and Agriculture. *Cold Plasma in Food and Agriculture*, 1–16. doi:10.1016/b978-0-12-801365-6.00001-9
- Moses, M. O., & Olanrewaju, J. (2018). Evaluation of functional and pasting properties of different corn starch flours. *International Journal of Food Science and Nutrition*, 3(6), 95–99. <https://www.foodsciencejournal.com/archives/2018/vol3/issue6/3-6-22>
- Muflihati, I., & Khikmah, N. (2023). Optimasi modifikasi *cross linking* pati ganyong menggunakan natrium asetat terhadap kekambaan bahan, kemampuan menyerap air dan minyak. *Agrointek: Jurnal Teknologi Industri Pertanian*, 17(3), 644–650.
- Muflihati, I., Marseno, D. W., & Pranoto, Y. (2019). Oxidation of Oven-Dried Cassava Starch Using Hydrogen Peroxide and UV-C Irradiation to Improve Frying Expansion. *Indonesian Food and Nutrition Progress*, 16(1), 14. <https://doi.org/10.22146/ifnp.46176>
- Muharam, T., Fitriani, D., Fataya Miftahul Jannah, D., Zidan Al Ghifari, M., & Pasonang Sihombing, R. (2022). Karakteristik Daya Serap Air Dan Biodegradabilitas Pada Bioplastik Berbasis Pati Singkong Dengan Penambahan *Polyvinyl Alcohol*. *Prosiding Snast*, November, D35-49. <https://doi.org/10.34151/prosidingsnast.v8i1.4152>
- Murdianto, W., & Pranoto, Y. (2018). Karakteristik Fisik Pati Ganyong (Canna Eduliskerr) Hasil Modifikasi Menggunakan Ozon. Seminar Nasional Inovasi Produk Pangan Lokal Untuk Mendukung Ketahanan Pangan, April, 228–231.
- Murdiyanto, D., Faizah, A., Khalifa, M., & Nabila, A. K. (2021). Potensi Penambahan Pati Jagung, Ubi Kayu, Beras Ketan Dan Sagu Pada Alginat Terhadap Perubahan Dimensi. *Proceeding of The 14th University Research Colloquium 2021: Bidang Kesehatan*, 669–677.
- Muslimah, S. M., Warkoyo, W., & Winarsih, S. (2021). Studi Pembuatan Edible Film Gel Okra (*Abelmoschus esculentus* L.) dengan Penambahan Pati

- Singkong. *Food Technology and Halal Science Journal*, 4(1), 94–108.
<https://doi.org/10.22219/fths.v4i1.15826>
- Myrra, A., & Dewi, P. (2019). Karakterisasi Sifat Fisikokimia Tapioka Teroksidasi Dan Aplikasinya Untuk Pembuatan Edible Film. Prosiding SNST Fakultas Teknik Universitas Wahid Hasyim. 2001, 19–24.
- Naknaen, P., Tobkaew, W., & Chaichaleom, S. (2017). Properties of jackfruit seed starch oxidized with different levels of sodium hypochlorite. *International Journal of Food Properties*, 20(5), 979–996.
- Nasir, N. N., & Othman, S. A. (2021). The Physical and Mechanical Properties of Corn-based Bioplastic Films with Different Starch and Glycerol Content. *Journal of Physical Science*, 32(3), 89–101.
- Nasution, S. F., Lubis, L. H., Harahap, S., & Siregar, A. U. (2023). Hidrolisis Pati Kacang Kedelai (*Glycine max (L.) Merril*) dengan Pengaruh Jenis Katalis Asam. *Journal of Pharmaceutical and Health Research*, 4(1), 141–146.
<https://doi.org/10.47065/jharma.v4i1.3187>
- Nateghi, L., Hosseini, E., & Fakheri, M. A. (2024). The effect of cold atmospheric plasma pretreatment on oil absorption, acrylamide content and sensory characteristics of deep-fried potato strips. *Food Chemistry: X*, 21(November 2023), 101194. <https://doi.org/10.1016/j.fochx.2024.101194>
- Niemira, B. A. (2012). Cold plasma decontamination of foods. *Annual Review of Food Science and Technology*, 3(1), 125–142.
- Ningtyastuti, D., Damat, & Winarsih, S. (2022). Karakteristik Fisiko-Kimia Beras Analog Kombinasi Pati Sagu, Tepung MOCAF, Tepung Porang (*Amorphophallus muelleri*) dan Tepung Kedelai. *Food Technology and Halal Science Journal*. 5(2), 221–231.
- Nisah, K. (2017). Study Pengaruh Amilosa dan Amilopektin Umbi-umbian Terhadap Karakteristik Fisik Plastik *Biodegradable*. *Jurnal Biotik*, 5(2), 106–113. <https://jurnal.ar-raniry.ac.id/index.php/biotik/article/view/3018/0>
- Nur Avif, A., & Oktaviana, T. (2020). Analisis Sifat Kimia Tepung Dan Pati Sorgum Dari Varietas Bioguma Dan Lokal Di Provinsi Nusa Tenggara Timur, Indonesia. *Lantanida Journal*, 8(2), 96–188.
- Okoyere, A. Y., Bertoft, E., & Annor, G. A. (2019). Modification of cereal and tuber waxy starches with radio frequency cold plasma and its effects on waxy starch properties. *Carbohydrate Polymers*, 223, 115075.
<https://doi.org/10.1016/j.carbpol.2019.115075>

- Okyere, A. Y., Rajendran, S., & Annor, G. A. (2022). Cold plasma technologies: Their effect on starch properties and industrial scale-up for starch modification. *Current Research in Food Science*, 5(January), 451–463. <https://doi.org/10.1016/j.crfs.2022.02.007>
- Pal, P., Kaur, P., Singh, N., Kaur, A. P., Misra, N. N., Tiwari, B. K., Cullen, P. J., & Virdi, A. S. (2016). Effect of nonthermal plasma on physico-chemical, amino acid composition, pasting and protein characteristics of short and long grain rice flour. *Food Research International*, 81, 50-57.
- Palguna, I., Sugiyono, & Hariyanto, B. (2014). Karakteristik Pati Sagu yang Dimodifikasi dengan Perlakuan Gelatinisasi dan Retrogradasi Berulang. *Jurnal Pangan*, 23(6), 146–156.
- Palimbong, S., Nugroho, P., & Alfianti Ajeng Pratiwi. (2023). Modifikasi Pati Suweg (*Amorphophallus Paeoniifolius* Var. *Companulatus*) dengan menggunakan Sodium Tripolifosfat (STPP). *Jurnal Pengolahan Pangan*, 8(1), 47–54. <https://doi.org/10.31970/pangan.v8i1.104>
- Palupi, N. W., Pranoto, Y., & Sutardi, S. (2020). Pembuatan nanopartikel pati jagung dengan teknik fotooksidasi menggunakan H₂O₂ dan lampu UV-C pada sistem tersirkulasi. *Jurnal Aplikasi Teknologi Pangan*, 9(3), 118–125. <https://doi.org/10.17728/jatp.7254>
- Pangesti, Y.D., Parnanto, N.H.R., & Ridwan, A.A. (2014). Kajian Sifat Fisikokimia Tepung Bengkuang (*Pachyrhizus erosus*) Dimodifikasi Secara Heat Moisture Treatment (HMT) dengan Variasi Suhu. *Jurnal Teknosains Pangan*, 3(3):73–77.
- Pankaj, S. K., Wan, Z., Colonna, W., & Keener, K. M. (2017). Effect of high voltage atmospheric cold plasma on white grape juice quality. *Journal of the Science of Food and Agriculture*, 97(12), 4016–4021.
- Pankaj, S.K., Wan, Z., De Leon, J.E., Mosher, C., Colonna, W., & Keener, K.M. (2017). High- voltage atmospheric cold plasma treatment of different types of starch films: cold plasma treatment of starch films. *Starch - Stärke* 69, 1700009. <https://doi.org/10.1002/star.201700009>
- Parinder, K, Uday, S., & Annapure. (2024). Understanding the atmospheric cold plasma-induced modification of finger millet (*Eleusine coracana*) starch and its related mechanisms. *International Journal of Biological Macromolecules*. Volume 268, Part 1, 131615.
- Parwiyanti, N, M., & Silalahi R. (2020). Karakteristik Fisikokimia Pati Ganyong (*Canna edulis* Kerr.) dan Garut (*Maranta arundinacea*) yang Dimodifikasi dengan NaOH-Etanol. 978–979.

- Perera, K. Y., Prendeville, J., Jaiswal, A. K., & Jaiswal, S. (2022). Cold Plasma Technology in Food Packaging. *Coatings*, 12(12), 1–19. <https://doi.org/10.3390/coatings12121896>
- Picauly, P., Damamain, E., & Polnaya, F. J. (2017). Karakteristik Fisiko-Kimia Dan Fungsional Pati Sagu Ihur Termodifikasi Dengan *Heat Moisture Treatment*. *Jurnal Teknologi Dan Industri Pangan*, 28(1), 70–77. <https://doi.org/10.6066/jtip.2017.28.1.70>
- Polnaya, F. J., Breemer, R., Augustyn, G. H., & Tuhumury, H. C. D. (2015). Characteristic of Physico-Chemical Properties of Sweet Potato, Cassava, Cocoyam, and Sago Starches. *Agrinimal: Jurnal Ilmu Ternak Dan Tanaman*, 5(1), 1–42.
- Potluri, S., Sangeetha, K., Santhosh, R., Nivas, G., & Mahendran, R. (2018). Effect of lowpressure plasma on bamboo rice and its flour. *Journal of Food Processing and Preservation*, 42(12), Article e13846.
- Pranoto, Y., Rahmayuni, Haryadi., & Rakshit., K. (2014). Physicochemical Properties of Heat Moisture Treated Sweet Potato Starches of Selected Indonesian Varieties. *International Food Research Journal*, Vol. 21, No. 5:2031– 2038.
- Pratama, & Suprpto. (2022). Modification and Characterization of Corn Starch (Zea mays [L]) And Xanthan Gum With Citric Acid Crosslinking Agent, 1, No (2)(2), 150–162.
- Pratama, F., Sari, I. P., Ridhowati, S., & Arsyad, F. S. (2020). A comparison of microwave and ultrasonic treatment on swelling power and water solubility of tapioca. *IOP Conference Series: Earth and Environmental Science*, 497, 012015. doi:10.1088/1755-1315/497/1/012015
- Punia, S. (2020). Barley starch modifications: Physical, chemical and enzymatic-A review. *International Journal of Biological Macromolecules*, 144, 578–585.
- Putri, A. A., & Anggreini, R. A. (2022). Effect of Heat-Moisture Treatment on Structural Characteristics and Physico-chemical Properties of Corn Starch-*Hydrocolloid: A review*. 2022, 348–355.
- Qi, M., Song, J., & Jiang, Y. (2024) Understanding the degradation mechanisms of cyanide and starch in cassava flour during extrusion processing. *J. Innovative Food Science and Emerging Technologies*, 91: 103548.

- Rahayu, L. H., Sriyana, H. Y., & Meliatama, L. R. (2023). Modifikasi Pati Kimpul (*Xanthosoma sagittifolium*) dengan Hidrolisis Enzimatis. *chemtaG. Journal of Chemical Engineering*, 4(2), 45. doi:10.56444/cjce.v4i2.4439
- Rahayu, R., Haryani, S., & Yuliani, S. (2023). Perbandingan Pati Modifikasi Heat Moisture Treatment, Asetilasi dan Kombinasi Ganda. *Jurnal Ilmiah Mahasiswa Pertanian*, 8(3), 394–401.
- Rahayu, S., & Kurniawansyah, I. (2018). Isolasi, Karakterisasi Sifat Fisikokimia, dan Aplikasi Pati Jagung Dalam Bidang Farmasetik. *Farmaka*, 4(2), 430–442.
- Rashid, F., Bao, Y., Ahmed, Z., & Huang, J. Y. (2020). Effect of high voltage atmospheric cold plasma on extraction of fenugreek galactomannan and its physicochemical properties. *Food Research International*, 138(PA), 109776. <https://doi.org/10.1016/j.foodres.2020.109776>
- Rashwan, A. K., Younis, H. A., Abdelshafy, A. M., Osman, A. I., Eletmany, M. R., Hafouda, M. A., & Chen, W. (2024). Plant starch extraction, modification, and green applications: a review. In *Environmental Chemistry Letters* (Vol. 22, Issue 5). Springer International Publishing. <https://doi.org/10.1007/s10311-024-01753-z>
- Riwayati, I., Anam, A. C., & Maharani, F. (2020). Pengaruh Suhu dan Waktu Proses Modifikasi Heat Moisture Treatment (HMT) Pada Tepung Kulit Singkong Terhadap Sifat Kelarutan Dan Swelling Power. *Jurnal Inovasi Teknik Kimia*, 5(1), 50–55. <https://doi.org/10.31942/inteka.v5i1.3402>
- Rosida, Dedin Finatsiyatull. (2021). “Buku Ajar Modifikasi Pati dari Umbi-Umbian Lokal dan Aplikasinya untuk Produk Pangan”. Surabaya: CV. Putra Media Nusantara (PMN).
- Rukmini, P., & Santosa, I. (2019). Pemanfaatan Pati Gembili (*Dioscorea esculenta*) Menjadi Glukosa dengan Metode Hidrolisis Asam Menggunakan Katalis HCL. *Konversi*, 8(1), 49–58. <https://doi.org/10.20527/k.v8i1.6514>
- Safitri, S. D. N., Ferdiansyah, M. K., & Nurlaili, E. P. (2019). Karakteristik Fisik Jagung P21 (*Zea mays* L.) Termodifikasi Menggunakan Metode Nikstamalisasi Dengan Formulasi Kalsium Hidroksida $\text{Ca}(\text{OH})_2$ dan Lama Perendaman. *Jurnal Teknologi Pertanian Andalas*, 23(1), 49. <https://doi.org/10.25077/jtpa.23.1.49-55.2019>
- Salgado, R., Rodriguez, J., Cohen, C., & Mendoza, G. (2018). Characterization of the techno-functional properties of starch from Purple yam (*Dioscorea alata*), Hawthorn yam (*Dioscorea rotundata*) and Diamante 22-type yam. *DYNA*, 85(207), 143–152. doi:10.15446/dyna.v85n207.72869

- Sangseethong, K., Termvejsayanon, N., & Sriroth, K. (2010). Characterization of Psychochemical Properties of Hypochlorite and Peroxide-Oxidized Cassava Starches. *Carbohydrate Polymers* 82: 446-453.
- Santana, R. F. (2018). Characterization of starch-based bioplastics from jackfruit seed plasticized with glycerol. *J. Food. Sci. Tech.*, 55(1), 278–286. doi: 10.1007/s13197-017-2936-6
- Santoso, S., Polnaya, F. J., & Picauly, P. (2024). The effect of modified heat moisture treatment with microwave on physicochemical characteristics of sago starch. 15(2), 149–154.
- Sarangapani, C., Rohit, T., Devi, Y., Trimukhe, A., Deshmukh, R., & Annapure, U. (2016). Effect of low pressure plasma on physiochemical properties of parboiled rice. *LWT- Food Science and Technology*, 69, 482-489. doi:10.1016/j.lwt.2016.02.003
- Segat, A., Misra, N. N., Cullen, P. J., & Innocente, N. (2016). Effect of atmospheric pressure cold plasma (ACP) on activity and structure of alkaline phosphatase. *Food and Bioproducts Processing*, 98, 181–188.
- Shen, C., Chen, W., Aziz, T., Al-Asmari, F., Alghamdi, S., Bayahya, S. H., Cui, H., & Lin, L. (2024). Effects of cold plasma pretreatment before different drying process on the structural and functional properties of starch in Chinese yam. *International Journal of Biological Macromolecules*, 274(P1), 133307. doi: 10.1016/j.ijbiomac.2024.133307
- Shen, H., Ge, X., Zhang, B., Su, C., Zhang, Q., & Jiang, H. (2021). Understanding the multi-scale structure, physicochemical properties and in vitro digestibility of citrate naked barley starch induced by non-thermal plasma. *Food & Function*, 12, 8169–8180.
- Shen, H., Ge, X., Zhang, Q., Zhang, X., Lu, Y., Jiang, H., Zhang, G., & Li, W. (2022). Dielectric barrier discharge plasma improved the fine structure, physicochemical properties and digestibility of α -amylase enzymatic wheat starch. *J. IFSET*, 78: 102991.
- Shi, M., Li, D., Yan, Y., & Liu, Y. (2018). Effect of Moisture Content on Structure and Properties of Fried Potato Starch. In *Starch/Staerke* (Vol. 70, Issues 11–12). <https://doi.org/10.1002/star.201800012>
- Shokrollahi, F., Shahidi, F., Varidi, M., Koocheki, A., & Sohbatzadeh, F. (2021). The Effect of non-thermal plasma on improvement of functional properties of sorghum starch. *Journal*. <https://doi.org/10.22067/ifstrj.2021.70973.1062>

- Sifuentes-Nieves, I., Mendez-Montecalvo, G., Flores-Silva, P. C., Nieto-Perez, M., Neira-Velazquez, G., Rodriguez-Fernandez, O., Hernández-Hernández, E., & Velazquez, G. (2021). Dielectric barrier discharge and radio-frequency plasma effect on structural properties of starches with different amylose content. *Innovative Food Science and Emerging Technologies*, 68(October 2020). <https://doi.org/10.1016/j.ifset.2021.102630>
- Sifuentes-Nieves, I., Velazquez, G., Flores-Silva, P. C., Hernandez-Hernandez, E., Neira-Velazquez, G., Gallardo-Vega, C., & Mendez-Montecalvo, G. (2020). HMDSO plasma treatment as alternative to modify structural properties of granular starch. *International Journal of Biological Macromolecules*, 144, 682–689. <https://doi.org/10.1016/j.ijbiomac.2019.12.111>
- Simarmata, E. O., Hartiati, A., & Harsojuwono, B. A. (2020). Karakteristik Komposit Bioplastik Dalam Variasi Rasio Pati Umbi Talas (*Xanthosoma sagittifolium*) Kitosan. *Jurnal Ilmiah Teknologi Pertanian Agrotechno*, 5(2), 75. <https://doi.org/10.24843/jitpa.2020.v05.i02.p05>
- Sismaini, S., Nasution, I. S., & Putra, B. S. (2022). Kuat Tarik Edible Film Bahan Dasar Pati Sagu Dengan Penambahan Gliserol Sebagai *Plasticizer*. *Jurnal Ilmiah Mahasiswa Pertanian*, 7(2), 472–479.
- Sonawane, S. K., T, M., & Patil, S. (2020). Non-thermal plasma: An advanced technology for food industry. *Food Science and Technology International*, 26(8), 727–740. <https://doi.org/10.1177/1082013220929474>
- Srichuwong, S., Isono, N., Jiang, H., Mishima, T. & Hisamatsu, M. (2012). Freeze–thaw stability of starches from different botanical sources: Correlation with structural features. *Carbohydrate Polymers*, 87(2), pp. 1275-1279. doi: 10.1016/j.carbpol.2011.09.004
- Subedi, D. P., Joshi, U. M., & Wong, C. S. (2017). Dielectric Barrier Discharge (DBD) Plasmas and Their Applications. *Plasma Science and Technology for Emerging Economies*, 693–737. doi:10.1007/978-981-10-4217-1_1
- Sudheesh, C., Sunooj, K., Sinha, S., George, J., Kumar, S., Murugesan, P., Arumugam, S., Ashwath Kumar, K., & Sajeev, K. (2019). Impact of energetic neutral nitrogen atoms created by glow discharge air plasma on the physico-chemical and rheological properties of kithul starch. *Food Chem.* 294, 194–202.
- Sultan, N. F. K., & Johari, W. L. W. (2017). The development of banana peel or corn starch bioplastic film: A preliminary study. *Bioremediat. Sci. Tech. Res.*, 5(1), 12–17.

- Sumardiono, S., Jos, B., Pudjihastuti, I., Yafiz, A. M., Rachmasari, M., & Cahyono, H. (2021). Physicochemical Properties of Sago Ozone Oxidation: The Effect of Reaction Time, Acidity, and Concentration of Starch. *Foods*, 10(6), 1309. doi:10.3390/foods10061309
- Sumardiono, S., Kusumawardani, N., Abdurahman, A., Arland, A., Jos, B., & Pudjihastuti, I. (2020). The modification of sago (*Metroxylon Sagu*) starch by combination of lactic acid hydrolysis and H₂O₂ oxidation methods to increase baking expansion. *Proceedings Of 2nd International Conference on Chemical Process and Product Engineering (ICCPPE)* 2019. doi:10.1063/1.5140940
- Sun, Q., Han, Z., Wang, L., & Xiong, L. (2014). Physicochemical differences between sorghum starch and sorghum flour modified by heat-moisture treatment. *Food Chemistry*, 15(145): 756-764.
- Sun, X., Saleh, A. S. M., Sun, Z., Ge, X., Shen, H., Zhang, Q., Yu, X., Yuan, L., & Li, W. (2022). Modification of multi-scale structure, physicochemical properties, and digestibility of rice starch via microwave and cold plasma treatments. *Lwt*, 153 (September 2021), 112483.
- Sun, X., Sun, Z., Saleh, A. S. M., Lu, Y., Zhang, X., Ge, X., Shen, H., Yu, X., & Li, W. (2023). Effects of various microwave intensities collaborated with different cold plasma duration time on structural, physicochemical, and digestive properties of lotus root starch. *Food Chemistry*, 405(PA), Article 134837. <https://doi.org/10.1016/j.foodchem.2022.134837>
- Surendra, A., & Parimalavalli, R. (2018). Effect of pullulanase debranching and storage temperatures on structural characteristics and digestibility of sweet potato starch. *Journal of the Saudi Society of Agricultural Sciences*, 17(2), 208–216. doi:10.1016/j.jssas.2016.04.005
- Suroto, Alip., & Suwandojo, Dodik. (2023). Analisis Bibliometrik Pemanfaatan Sagu dalam Pengolahan Makanan. *Jurnal Inovasi Penelitian*. 3(8): 7455-7466.
- Syafutri, M. I. (2022). Pengaruh Heat Moisture Treatment terhadap Sifat Fisikokimia Tepung Beras Merah Termodifikasi. *Jurnal Pangan*, 30(3), 175–186. <https://doi.org/10.33964/jp.v30i3.530>
- Syakir, M & Karmawati, E. (2013). Potensi Tanaman Sagu (*Metroxylon spp.*) Sebagai Bahan Baku Bioenergi. *Perspektif* Vol 12 No. 2. Hlm. 57-64.
- Syamsir, E., Hariyadi, P., Fardiaz, D., Andarwulan, N., & Kusnandar, F. (2020). Karakterisasi Tapioka dari Lima Varietas Ubi Kayu (*Manihot utilissima* Crantz) Asal Lampung. *Jurnal Agroteknologi*, 5(1), 93–105.

- Syartiwidya. (2023). Sagu (*Metroxylon Sp.*). *Jurnal Selodang Melayu*, 9(1), 76–83.
- Syukri, D., & Dina, M. (2022). Kumpulan informasi terkait penelitian dan pengembangan produk olahan berbahan baku jagung. Padang: Andalas University Press.
- Tarahi, M., Shahidi, F., Hedayati, S. A. (2022). Novel Starch from Bitter Vetch (*Vicia ervilia*) Seeds: A Comparison of Its Physicochemical, Structural, Thermal, Rheological, and Pasting Properties with Conventional Starches. *Int. J. Food Sci. Technol.*
- Tavares, A.C.K., Zanatta, E., Zavareze, E.R., Helbig, E., & Dias, A.R.G. (2010). The Effect of Acid and Oxidative Modification on The Expansion Properties of Rice Flours With Varying Levels of Amylose. *LWT-Food Science And Technology*. 43 : 1213-1219.
- Tethool, E. F., Dewi, A. M. P., & Jading, A. (2017). Pengaruh Fotooksidasi Uv-C Terhadap Sifat Fisikokimia dan Baking Expansion Pati Sagu (*Metroxylon sago*). *Agrointek*, 11(2), 45. <https://doi.org/10.21107/agrointek.v11i2.2917>
- Thirumdas, R., Kadam, D., & Annapure, U. S. (2017). Cold Plasma: An alternative Technology for the Starch Modification. *Food Biophysics*, 12(1), 129–139. <https://doi.org/10.1007/s11483-017-9468-5>
- Thirumdas, R., Trimukhe, A., Deshmukh, R. R., & Annapure, U. S. (2017). Functional and rheological properties of cold plasma treated rice starch. *In Carbohydrate Polymers* (Vol. 157). Elsevier Ltd. <https://doi.org/10.1016/j.carbpol.2016.11.050>
- Tirta, P., Indrianti, N., & Ekafitri, R. (2013). Potensi Tanaman Sagu (*Metroxylon sp.*) dalam Mendukung Ketahanan Pangan di Indonesia. *Jurnal Pangan*, 22(1), 61–75.
- Triastuti, W. E., Muyassaroh, T., Bawafi, S., Oktaviana, C., Sampurno, E., Meghotsah, M. A., Diannico, F., & Ardhana, K. S. (2023). Modifikasi Pati Secara Asetilasi dan Aplikasinya Sebagai Bahan Dasar Filamen Jaring Ikan Ramah Lingkungan. *Prosiding Seminar Nasional Teknik Kimia “Kejuangan” Pengembangan Teknologi Kimia Untuk Pengolahan Sumber Daya Alam Indonesia*, 1(1), 1–6.
- Unal, K., Alpas, H., & Oztop, M. H. (2023). Modification of Quinoa Starch by High Hydrostatic Pressure and Ultrasonication and Assessment of Its Physicochemical Properties. *ACS Food Science and Technology*, 3(1), 31–40. Doi: 10.1021/acsfoodscitech.2c00230

- Ulyarti. (2018). Pengaruh Amilosa dan Amilopektin Terhadap Sifat Pasta Pati Jagung. *Jurnal Sainmatika*, 7(1), 1–5. doi:10.1234/sainmatika.v7i1.2371
- Uraives, P., & Choomjaihan, P. (2019). Some physicochemical properties of tapioca starch during infrared heat treatment. *IOP Conference Series: Earth and Environmental Science*, 301, 012044. doi:10.1088/1755-1315/301/1/012044
- Vanier, N. L., El Halal, S. L. M., Dias, A. R. G., & Rosa Zavareze, E. (2017). Molecular structure, functionality and applications of oxidized starches: A review. *Food Chemistry*, 221, 1546–1559. <https://doi.org/10.1016/j.foodchem.2016.10.138>
- Wang, B., Dong, Y., Fang, Y., Gao, W., Kang, X., Liu, P., & Aty, A. M. (2022). Effects of different moisture contents on the structure and properties of corn starch during extrusion. *Food Chemistry*, 368, 130804. doi:10.1016/j.foodchem.2021.13080
- Wang, D., Fan, D. C., Ding, M., Ge, P. Z., & Zhou, C. Q. (2015). Characteristics of different types of starch in starch noodles and their effect on eating quality. *International Journal of Food Properties*, 18(11), 2472–2486. <https://doi.org/10.1080/10942912.2014.983606>
- Wang, J., Guo, K., Fan, X., Feng, G., & Wei, C. (2018). Physicochemical Properties of C-Type Starch from Root Tuber of *Apios fortunei* in Comparison with Maize, Potato, and Pea Starches. *Molecules*, 23, 2132.
- Wang, S., Caili, L., Copeland, L., Niu, Q., & Wang, S. (2015). Starch retrogradation: A comprehensive review. *Comprehensive Reviews in Food Science and Food Safety*, 14, 568–585.
- Wang, S., Jin, F., Yu, J. (2013). Pea Starch Annealing: New Insights, *Food & Bioprocess Technology* 6(12): 3564 -3575.
- Wang, Z., & Niu, J. (2024). Study on physicochemical properties of corn starch modified by dielectric barrier discharge (DBD) plasma. *Journal of Physics: Conference Series*, 2808(1), 0–6. <https://doi.org/10.1088/1742-6596/2808/1/012032>
- Wanigasekara, J., Barcia, C., Cullen, P.J., Tiwari, B., & Curtin, J.F. (2022). Plasma induced reactive oxygen species-dependent cytotoxicity in glioblastoma 3D tumourspheres. *Plasma Process. Polym.*, 19, e2100157.
- Widyastuti, R., Pranoto, Y., & Anggrahini, S. (2021). Fisikokimia pati *millet* (*Pennisetum glaucum*) termodifikasi *heat moisture treatment*. *Journal of Food and Agricultural Product*, 1(1), 1–7.

- Wongsagonsup, R., Deeyai, P., Chaiwat, W., Horrungsiwat, S., Leejariensuk, K., Suphantharika, M., Fuongfuchat, A., & Dangtip, S. (2014). Modification of tapioca starch by non-chemical route using jet atmospheric argon plasma. *Carbohydr. Polym.* <https://doi.org/10.1016/j.carbpol.2013.10.089>
- Wu, T., Chang, C., Chang, T., Chang, Y., Liew, Y., & Chau, C. (2019). Changes in physicochemical properties of corn starch upon modifications by atmospheric pressure plasma jet. *Food Chem.* 283, 46–51. <https://doi.org/10.1016/j.foodchem.2019.01.043>.
- Wu, T., Sun, N., & Chau, C. (2018). Application of corona electrical discharge plasma on modifying the physicochemical properties of banana starch indigenous to Taiwan. *Journal of Food and Drug Analysis*, 26, 244-251.
- Wu, Y., Feng, X., Zhu, Y., Li, S., Hu, Y., Yao, Y., & Zhou, N. (2023). The Effect of Atmospheric Dielectric Barrier Discharge Cold Plasma Treatment on the Nutritional and Physicochemical Characteristics of Various Legumes. *Foods*, 12(17). <https://doi.org/10.3390/foods12173260>
- Wu, Z., Qiao, D., Zhao, S., Lin, Q., Zhang, B., & Xie, F. (2022). Nonthermal physical modification of starch: An overview of recent research into structure and property alterations. *International Journal of Biological Macromolecules*, 153–175. doi: 10.1016/j.ijbiomac.2022.01.103
- Xia, T., Gou, M., Zhang, G., Li, W., & Jiang, H. (2018). Physical and structural properties of potato starch modified by dielectric treatment with different moisture content. *International Journal of Biological Macromolecules*. doi:10.1016/j.ijbiomac.2018.06.149
- Yan, S. L., Chen, G. Y., Hou, Y. J., & Chen, Y. (2020). Improved solubility of banana starch by dielectric barrier discharge plasma treatment. *International Journal of Food Science and Technology*, 55(2), 641–648. <https://doi.org/10.1111/ijfs.14318>
- Yan, Y., Feng, L., Shi, M., Cui, C., & Liu, Y. (2020). Effect of plasma-activated water on the structure and in vitro digestibility of waxy and normal maize starches during heat-moisture treatment. *Food Chemistry*, 306, 125589. <https://doi.org/10.1016/j.foodchem.2019.125589>
- Yao, M., Tian, Y., Yang, W., Huang, M., Zhou, S. & Liu, X. (2019). The multi-scale structure, thermal and digestion properties of mung bean starch. *Journal Biology Macromolecules*, 131, 871-878.
- Yu, C, Liu, J, Xiaozhi, Shen, Xinchun, & Liu, S. (2017). Correlations between the physical properties and chemical bonds of extruded corn starch enriched

- with whey protein concentrate. *RSC Advances*, 7(20), 11979–11986. doi:10.1039/c6ra26764e
- Yudha, E. P., Salsabila, A., & Haryati, T. (2023). Analisis Daya Saing Ekspor Komoditas Ubi Kayu Indonesia, Thailand Dan Vietnam Di Pasar Dunia. *Jurnal Maneksi*, 12(2), 417–424. <https://doi.org/10.31959/jm.v12i2.1450>
- Zang, K, X. Zhao, Z, H. & Zhao, M. (2022) Low-pressure plasma modification of the rheological properties of tapioca starch. *J. Food Hydrocolloids*, 125:107380.
- Zare, L., Mollakhalili-Meybodi, N., Fallahzadeh, H., & Arab, M. (2022). Effect of atmospheric pressure cold plasma (ACP) treatment on the technological characteristics of quinoa flour. *Lwt*, 155 (December 2021), 112898. <https://doi.org/10.1016/j.lwt.2021.112898>
- Zavareze, E. da R., Pinto, V. Z., Klein, B., El Halal, S. L. M., Elias, M. C., Prentice-Hernández, C., & Dias, A. R. G. (2012). Development of oxidised and heat-moisture treated potato starch film. *Food Chemistry*, 132(1), 344–350. doi:10.1016/j.foodchem.2011.10.090 10.1016/j.foodchem.2011.10.090
- Zhang, B., Zhang, Q., Wu, H., Su, C., Ge, X., & Shen, H. (2021). The influence of repeated versus continuous dry-heating on the performance of wheat starch with different amylose content. *LWT-Food Science and Technology*, 136, 110380.
- Zhang, B., Zhao, K., Su, C., Gong, B., Ge, X., Zhang, Q. (2020). Comparing the multi-scale structure, physicochemical properties and digestibility of wheat A-and B- starch with repeated versus continuous heat-moisture treatment. *International Journal of Biological Macromolecules*, 163, 519–528.
- Zhang, Q., Cheng, Z., Zhang, J., Nasiru, M. M., Wang, Y., & Fu, L. (2021). Atmospheric cold plasma treatment of soybean protein isolate: Insights into the structural, physicochemical, and allergenic characteristics. *Journal of Food Science*, 86(1), 68–77. <https://doi.org/10.1111/1750-3841.15556>
- Zheng, M. Z., Xiao, Y., Yang, S., Liu, H. M., Liu, M. H., & Yaqoob, S., (2020). Effects of heat-moisture, autoclaving, and microwave treatments on physicochemical properties of proso millet starch. *Food Sciences and Nutrition*, 8, 735–743.
- Zhou, Y., Yan, Y., Shi, M., & Liu, Y. (2018). Effect of an atmospheric pressure plasma jet on the structure and physicochemical properties of waxy and normal maize starch. *J. Polymers*, 11(1): 8.

- Zhu, F. (2015). Impact of ultrasound on structure, physicochemical properties, modifications, and application of starch. *Trends Food Sci. Technol.* 43, 1–17.
- Zhu, F. (2017). Plasma modification of starch. *Food Chemistry*, 232, 476–486. <https://doi.org/10.1016/j.foodchem.2017.04.024>
- Zhu, F. (2014). Structure, physicochemical properties, modifications, and uses of sorghum starch. *Comprehensive Reviews in Food Science and Food Safety*, 13(4), 597–610. <https://doi.org/10.1111/1541-4337.12070>
- Zia, D., Xiong, H., & Fei, P. (2015). Physical and chemical modification of starches: A review. *Critical Reviews in Food Science and Nutrition*, 57(12), 2691–2705. doi:10.1080/10408398.2015.1087379
- Zuo, Y., Zou, F., Yang, M., Xu, G., Wu, J., Wang, L., & Wang, H. (2024). Effects of plasma-activated water combined with ultrasonic treatment of corn starch on structural, thermal, physicochemical, functional, and pasting properties. *Ultrasonics Sonochemistry*. <https://doi.org/10.1016/j.ultsonch.2024.106963>