

DAFTAR PUSTAKA

- Abe, K., & Uchida, K. 1989. Correlation between depression of catabolite control of xylose metabolism and a defect in the phosphoenolpyruvate:Mannose phosphotransferase system in *Pediococcus halophilus*. *Journal of Bacteriology*, 171(4): 1793-1800.
- Adisetya, E., Krisdiarto, A.W., & Partha, I.B.B. 2022. Pengaruh kondisi penyadapan terhadap kualitas nira kelapa (*Cocos nucifera*). *Prosiding Seminar Nasional INSTIPER*, 271-278.
- AgbioInvestor. 2024. Global GM Crop Area 2023 Review. (On-line). <https://gm.agbioinvestor.com/downloads> diakses 18 Desember 2025.
- Agustin, V.A., Nursanti, A.D., Robbani, M.M., Setyowati, S.K., & A., L.D.D. Pengaruh jenis kacang kedelai dalam proses fermentasi pada pembuatan kecap manis. *Intellektika: Jurnal Ilmiah Mahasiswa*, 2(4): 35-41.
- Aidoo, K.E., Nout, M.J.R., & Sarkar, P.K. 2005. Occurrence and function of yeasts in Asian indigenous fermented foods. *FEMS Yeast Res*, 6(2005): 30-39.
- Amar, A., Makosim, S., Sukotjo, S., Ahadiyanti, N., & Weisman, E. 2021. Growth dynamics of mold-yeast and bacteria during the production process of saga tauco (*Adenanthera pavonina*). *Proceedings of The IOP Conf. Series: Earth and Environmental Science*, P. 1-7.
- Amorta, D.Z., & Nurhidajah. 2020. Sifat kimia dan sensori serbuk beras hitam dengan variasi metode pemasakan dan penambahan bubuk kedelai. *Jurnal Pangan dan Gizi*, 10(1): 60-73.
- AOAC. 2005. *Official Methods of Analysis of the Association of Official Analytical Chemists*. Marlyand: Association of Official Analytical Chemist.
- Apriyanto, M., Fangohoi, L., Aprilia, V., Diba, D.F., Prayitno, S.H., Nurhayati, N., Sari, D.A. 2021. *Pangan Berbasis Fermentasi*. Yogyakarta: Nuha Medika.
- Arumsari, N.G., Suparthana, I.P., & Nocianitri, K.A. 2022. Pengaruh suhu dan lama fermentasi terhadap karakteristik kedelai terfermentasi dalam tahapan produksi sere kedele. *Itepa: Jurnal Ilmu dan Teknologi Pangan*, 11(4): 776-787.
- Ashgar, M.T., Yusof, Y.A., Mokhtar, M.N., Ya'acob, M.E., Ghazali, H.M., Chang, L.S., Manaf, N.M. 2019. Coconut (*Cocos nucifera* L.) sap as a potential source of sugar: Antioxidant and nutritional properties. *Wiley Food Science & Nutrition*, 8: 1777-1787.

- Astuti, B.C. 2014. Pengaruh perbedaan suhu fermentasi moromi terhadap sifat kimia dan mikroflora moromi kecap koro pedang (*Canavalia ensiformis* L.). *Jurnal Teknologi Pertanian*, 9(1): 8-15.
- Astuti, A.F., & Wardani, A.K. 2016. Pengaruh lama fermentasi kecap ampas tahu terhadap kualitas fisik, kimia dan organoleptik. *Jurnal Pangan dan Agroindustri*, 4(1): 72-83.
- Attorney General's Chambers of Malaysia. 2019. *Food (Amendment) (No.3) Regulations 2019*. Peraturan-Peraturan Makanan (Pindaan) (No. 3) 2019.
- Azlan, A., Khoo, H.E., Sajak, A.A.A., Aizan, N.A., Kadir, A., Yusof, B.N.M., Mahmood, Z., & Sultana, S. 2020. Antioxidant activity, nutritional and physicochemical characteristics, and toxicity of minimally refined brown sugar and other sugars. *Food Sci Nutr*, 8:5048-5062.
- Badan Pengawas Obat dan Makanan. 2017. *Produksi Pangan Untuk Industri Rumah Tangga: Kecap Asin*. Jakarta: Badan Pengawas Obat dan Makanan.
- Badan Pusat Statistik. 2024. Luas Tanaman Perkebunan Menurut Provinsi (Ribu Hektar), 2023. (On-line). <https://www.bps.go.id/id/statistics-table/2/MTMxIzI=/luas-tanaman-perkebunan-menurut-provinsi--ribu-hektar-.html> diakses 15 September 2025.
- Badan Standardisasi Nasional (BSN). 2006. *Petunjuk Pengujian Organoleptik dan atau Sensori*. SNI 01-2346-2006 Badan standardisasi nasional Indonesia. Jakarta.
- Bao, R., Liu, S., Ji, C., Liang, H., Yang, S., Yan, X., Zhou, Y., Lin, X., & Zhu, B. 2018. Shortening fermentation period and quality improvement of fermented fish, chouguiyu, by co-inoculation of *Lactococcus lactis* M10 and *Weissella cibaria* M3. *Frontiers in Microbiology*, 9:3003.
- Bartle, L., Sumbly, K., Sundstrom, J., & Jiranek, V. 2019. The microbial challenge of winemaking: Yeast-bacteria compatibility. *FEMS Yeast Research*, 19(4): 1-16.
- Boughter, J.D.Jr., & Bachmanov, A.A. 2007. Behavioral genetics and taste. *BMC Neuroscience*, 8(3): 1471–2202.
- Bruslind, L. 2025. *Microbiology*. California: LibreText.
- Byeon, Y.S., Heo, J.A., Park, K., Chin, Y.W., Hong, S.P., Lim, S.D., & Kim, S.S. 2020. Consumer Preference of traditional Korean soy sauce (ganjang) and

- its relationship with sensory attributes and physicochemical properties. *Foods*, 12(2361): 1-18.
- Candra, Y., Setiarini, A., & Rengganis, I. 2011. Gambaran sensitivitas terhadap alergen makanan. *MAKARA KESEHATAN*, 15(1): 44-50.
- Cao, C., Sun, H., Song, X., Zhao, M., Lin, W., Sun, W., Lin, L., Li, W., & Su, G. 2023. Effect of fermentation with *Tetragenococcus halophilus* and *Zygosaccharomyces rouxii* on selected non-volatile taste compounds in soybean protein hydrolysates. *LWT*, 184(115053): 1-10.
- Chen, C., Wen, L.F., Yang, L.X., Li, J., Kan, Q.X., Xu, T., Liu, Z., Fu, J.Y., & Cao, Y. 2023. Metagenomic and metaproteomic analyses of microbial amino acid metabolism during Cantonese soy sauce fermentation. *Front. Nutr.*, 10: 1-11.
- Chen, T., Xu, Y., Zhao, M., & Feng, Y. 2022. Changes in carbohydrate profiles during soy sauce fermentation and its influence on the flavor of soy sauce. *SSRN*: 1-27.
- Chon, S.Y. & Kim, M.K. 2025. Viscosity of doenjang soup: Exploring how it shapes consumer perception of kokumi and mouthfeel. *Journal of Sensory Studies*, 40: 1-8.
- Coman, C., Coman, E., & Cilan, T.F. 2025. Emerging trends in food consumer behaviour. *Amfiteatru Economic*, 27(69): 398-413.
- David, W., & Alkausar, S. 2023. *Statistik Pertanian Organik Indonesia*. Bogor: Universitas Bakrie Press.
- Det-udom, R., Gilbert, C., Liu, L., Prakitchaiwattana, C., Ellis, T., & Amaro, R.L. 2019. Towards semi-synthetic microbialcommunities: Enhancing soy sauce fermentation properties in *B. subtilis* co-cultures. *Microbial cell Factories*, 18(101): 1-8.
- Devanthi, P.V.P., & El Kadri, H., Bowden, A., Spyropoulos, F., & Gkatzionis, K. 2018. Segregation of *Tetragenococcus halophilus* and *Zygosaccharomyces rouxii* using w1/o/w2 double emulsion for use in mixed culture fermentation. *Food Research International*, 105: 333-343.
- Devanthi, P.V.P., & Gkatzionis, K. 2019. Soy sauce fermentation: Microorganisms, aroma formation, and process modification. *Food Research International*, 120: 364-374
- Dharmawan, B., Sakhidin, Karseno, Widyarini, I., Satriani, R., Sudarmadji, A., Sunendar, Novia, R.A. 2025. Riset pasar produk kecap *coconut aminos* (Studi

- kasus *coconut aminos* “Gulapa” PT. Berkat Petani Indonesia). *AGRICA*, 18(1): 199-211.
- Dias, N.A.A., Lara, S.B., Miranda, L.S., Pires, I.S.C., Pires, C.V., & Halboth, N.V. 2012. Influence of color on acceptance and identification of flavor of foods by adults. *Ciência e Tecnologia de Alimentos*, 32(2): 296-301.
- Diez-Simon, C., Eichelsheim, C., Mumm, R., & Hall, R.D. 2020. Chemical and sensory characteristics of soy sauce: A review. *Journal of Agricultural and Food Chemistry*, 68:11612-11630.
- Fuadi, M., Sinaga, Y.M.R., Yuniarto, K., & Widyastuti, S. 2023. Perubahan sifat fisik dan hubungan antar parameter nira aren selama proses pemasakan terbuka. *TEKNOTAN*, 17(3): 189-196.
- Fukuzumi, A., Tokumasu, N., Matsuo, A., Yano, E., Zaima, N., & Moriyama, T. 2021. Detection and characterization of the soybean allergen Gly M 7 in soybeans and processed soybean foods. *Allergies*, 1: 233-246.
- George, F., Daniel, C., Thomas, M., Singer, E., Guilbaud, A., Tessier, F.J., Junelles, A.M.R., Borges, F., & Foligne, B. 2018. Occurance and dynamism of lactic acid bacteria in distinct ecological niches: A multifaceted functional health perspective. *Frontiers in Microbiology*, 9(2899): 1-15.
- Guidi, L.R. & Gloria, M.B.A. 2012. Bioactive amines in soy sauce: Validation of method, occurrence and potential health effects. *Food Chemistry*, 133: 323-328.
- Guindo, C.O., Morsli, M., Bellali, S., Drancourt, M., & Grine, G. 2022. A *Tetragenococcus halophilus* human gut isolate. *Current Research in Microbial Sciences*, 3: 1-9.
- Ha, L.T., Trinh, N.N., Chau, L.T.M., & Tu, N.T.M. 2019. Characterization of *Tetragenococcus halophilus* from Vietnamese fish mash. *Vietnam Journal of Science and Technology*, 57(5): 544-550.
- Hadijah, S. 2015. Deteksi cemaran bakteri pada jamu tradisional yang dijajakan di Kelurahan Banta-Bantaeng. *Jurnal Pendidikan Biologi – FTK UINAM*, 107-114.
- Haryanti, P., Supriyadi, Marseno, D.W., & Santoso, U. 2018. Effects of different weather conditions and addition of mangosteen peel powder on chemical properties and antioxidant activity of coconut sap. *Agritech*, 38(3):295-303.

- Hafiz, M.H., & Tanggasari, D. 2021. Pengaruh kualitas kematangan pisang kepok terhadap tingkat kemanisan pisang sale. *Protech Biosystems Journal*, 1(1): 1-11.
- Hosry, L.E., Elias, V., Chamoun, V., Halawi, M., Cayot, P., Nehme, A., & Bou-Maroun, E. 2025. Maillard reaction: Mechanism, influencing parameters, advantages, disadvantages, and food industrial applications: A review. *Foods*, 14(1881): 1-43.
- Humairoh, D. 2017. Identifikasi kapang pada kecap kedelai manis produksi lokal kediri dengan metode pengenceran. *Jurnal Sains dan Teknologi*, 6(1): 11-20.
- Iskandar, A., & Darussalam, L.Y. 2020. Karakteristik nira kelapa fermentasi dengan metoda fermentasi moromi. *Jurnal Teknologi Industri Pertanian*, 30(2): 244-255.
- Ito, K., Koyama, Y., & Hanya, Y. 2013. Identification of the glutaminase genes of aspergillus sojae involved in glutamate production during soy sauce fermentation. *Biosci. Biotechnol. Biochem.*, 77(9): 1832-1840.
- Ito, K., & Matsuyama, A. 2021. Koji molds for Japanese soy sauce brewing: Characteristics and key enzymes. *Journal of Fungi*, 7: 1-18.
- Jayus, J., Rosyidawati, E.H., & Purnomo, B.H. 2019. Akselerasi produksi moromi menggunakan inokulum *Pediococcus halophilus* FNCC 0033 dan *Zygosaccharomyces rouxii* FNCC 3008. *Jurnal Agroteknologi*, 13(2): 148-155.
- Jiang, S., Shi, Y., Li, M., Xiong, L., & Sun, Q. 2019. Characterization of maillard reaction products micro/nano particles present in fermented soybean sauce and vinegar. *Sci Rep*, 9(11285): 1-9.
- Jufri, R.F. 2020. The effect of environmental factors on microbial growth. *Journal La Lifesci*, 1(01): 12-17.
- Katz, Y., Castrellon, P.G., Gonzalez, M.G., Rivas, R., Lee, B.W., & Alarcon, P. 2014. A comprehensive review of sensitization and allergy to soy-based products. *Clinical Review in Allergy & Immunology*.
- Khoirunnisa, N.S., Anwar, S., Sudadi, U., Santosa, D.A. 2023. Enrichment media selection and co-culture potential among exoelectrogen bacteria vary with ecological factors. *Makara Journal of Science*, 27(1): 31-41.
- Kim, J.A., Yao, Z., Perumal, V., Kim, H.J., Kim, J.H. 2018. Properties of *Tetragenococcus halophilus* strains isolated from myeolchi (anchovy)-jeotgal. *Microbiol. Biotechnol. Lett*, 46(4): 313-319.

- Kim, T.J., Kim, M.J., Kang, Y.J., Yoo, J.Y., & Kim, J.H. 2023. Characterization of an aminopeptidase A from *Tetragenococcus halophilus* CY54 isolated from myeolchi-jeotgal. *J. Microbiol. Biotechnol.*, 33(3): 371–377.
- Kobayashi, T., Kajiwaru, M., Wahyuni, M., Sato, N.H., & Watanabe, E. 2004. Effect of culture conditions on lactic acid production of *Tetragenococcus* species. *Journal of Applied Microbiology*, 96: 1215-1221.
- Kristiandi, K., Lusiana, S.A., A'yunin, N.A.Q., Ramdhini, R.N., Marzuki, I., Rezeki, S., Erdiandini, I., Yuniarto, A.E., Lestari, S.D., Ifadah, R.A., Kushargina, R., Yuniarti, T., & Pasanda, O.S.R. 2021. *Teknologi Fermentasi*. Medan: Yayasan Kita Menulis.
- Kumakura, D., Yamaguchi, R., Hara, A., & Nakaoka, S. 2023. Disentangling the growth curve of microbial culture. *Journal of Theoretical Biology*, 573(111597): 1-9.
- Kumari, T., & Deka, S.C. 2021. Potential health benefits of garden pea seeds and pods: A review. *Wiley Legume Science*, 1-13.
- Kusnandar, F., Karisma, V.W., Firlieyanti, A.S., & Purnomo, E.H. 2020. Perubahan komposisi kimia tempe kacang merah (*Phaseolus vulgaris* L.) selama pengolahan. *Jurnal Teknologi Pangan*, 14(1): 108-123.
- Lee, H.J., Kim, J.H., Ji, D.S., & Lee, C.H. 2019. Effects of heating time and temperature on functional properties of proteins of yellow mealworm larvae (*Tenebrio molitor* L.). *Food Science of Animal Resources*, 39(2): 296-308.
- Lee, J. 2023. Exploring sucrose fermentation: Microorganisms, biochemical pathways, and applications. *Fermentation Technology*, 12: 166.
- Lee, S., Kim, D.S., Son, Y., Le H.G., Jo, S.W., Lee, J., Song, Y., & Kim, H.J. 2022. Effects of salt treatment time on the metabolites, microbial composition, and quality characteristics of the soy sauce moromi extract. *Foods*, 11(63): 1-15.
- Li, D., Ma, Y., Fani, A.A., Lu, W., Singh, H., & Ye, A. 2025. Heat-induced modifications of pea protein: Implications for solubility and digestion behaviour. *Current Research in Food Science*, 11(101173): 1-13.
- Li, X., Xu, X., Wu, C., Tong, X., & Ou, S. 2023. Effect of sequential inoculation of *Tetragenococcus halophilus* and *Wickerhamomyces anomalus* on the flavour formation of early-stage moromi fermented at a lower temperature. *Foods*, 12(3509): 1-14.

- Ly, L., Eav, L.P., Chanto, M.T., Parakulsuksatid, P., & Tan, R. 2024. Evaluation of physicochemical and microbiological characteristics of different soy sauces sold in Phnom Penh, Cambodia. *Fortune Journals*, 7(1): 14-21.
- Mardhika, H., Dwiloka, B., & Setiani, B.E. 2020. Pengaruh berbagai metode thawing daging ayam petelur afkir beku terhadap kadar protein, protein terlarut dan kadar lemak steak ayam. *Jurnal Teknologi Pangan*, 4(1): 48-54.
- Marquez, D.B.M., Contreras, J.C., Rodriguez, R., Mussatto, S.I., Paz, J.E.W., Teixeira, J.A., & Aguilar, C.N. 2015. Influence of thermal effect on sugars composition of mexican dgave syrup. *CyTA – Journal of Food*, 13(4): 607-612.
- Matsuo, M.K., Oogai, Y., & Komatsuzawa, H. 2017. Sugar allocation to metabolic pathways is tightly regulated and affects the virulence of *Streptococcus mutans*. *Genes*, 8(11): 1-12.
- Mela, D.J., & Woolner, E.M. 2018. Perspective: Total, added, or free? What kind of sugars should we be talking about? *Adv Nutr*, 9:63–69
- Milla, M. R., & Maiyasa, F. 2022. Karakteristik kimiawi kecap bulu babi (*Diadema setosum*) dengan lama fermentasi yang berbeda. *MARINADE*, 5(1): 10-18.
- Ministry of Agriculture, Forestry and Fisheries. 2021. *Soy Sauce (Shoyu)*. Japanese Agricultural Standard (JAS) 1703:2021.
- Misra, B. 2016. Neera: The coconut sap: A review. *International Journal of Food Science and Nutrition*, 1(4): 35-38.
- Mulalapele, L.T., & Xi, J. 2021. Detection and inactivation of allergens in soybeans: A brief review of recent research advances. *Grain & Oil Science and Technology*, 4: 191-200.
- Nakkir, M., Masruhi, & Efendi, R. 2023. Pengukuran suhu air menggunakan data logger berbasis Arduino. *Jurnal Mekanova : Mekanikal, Inovasi, dan Teknologi*, 9(1): 310-314.
- Newton, A.E., Fairbanks, A.J., Golding, M., Andrewes, P., & Gerrard, J.A. 2012. The role of the Maillard reaction in the formation of flavour compounds in dirty products– not only a deleterious reaction but also a rich source of flavour compounds. *Food & Function*, 3: 1231-1241.
- Nguyen, P., Nguyen, T., Nguyen, H., Pham, M., & Nguyen, T. 2024. Halophilic lactic acid bacteria — Play a vital role in the fermented food industry. *Folia Microbiologica*, 69(3): 1-17.

- Ningrumsari, I. 2024. Characteristics Of moromi sweet sauce and the study of its activity on protein, sugar and viscosity levels. *Jurnal Ilmiah Multidisiplin Indonesia (JIM-ID)*, 3(2): 82-88.
- Niu, C., Yang, L., Zheng, F., Liu, C., Wang, J., Xu, X., & Li, Q. 2022. Systematic analysis of the aroma profiles produced by *Zygosaccharomyces rouxii* Y-8 in different environmental conditions and its contribution to doubanjiang (broad bean paste) fermentation with different salinity. *LWT – Food Science and Technology*, 158: 1-10.
- Ozturk., G., Dogan, M., & Toker, O.S. 2014. Physicochemical, functional and sensory properties of mellorine enriched with different vegetable juices and TOPSIS approach to determine optimum juice concentration. *Food Bioscience* 7: 45-55.
- Pal, H., Banik, A.K., & Nuchhungi. 2007. Effect of blending, additives and storage conditions on the quality of watermelon nectar. *Journal of Horticultural Sciences*, 2(1):38-43.
- Pangestika, L.M.W., Lioe, H.N., Adawiyah, D.R., Suliantari, S., Melzer, G., & Weinreich, B. 2021. Penggunaan ekstrak khamir sebagai nutrisi tambahan pada fermentasi moromi kecap kedelai. *Jurnal teknologi Pertanian*, 22(1):1-12.
- Park, S., Kwak, H.S., Oh, M., Lee, Y., Jeong, Y., & Kim, M. 2016. Physicochemical, microbiological, and sensory characteristics of soy sauce fermented in different regional ceramics. *Appl Biol Chem*, 59(1): 33-41.
- Pelegri, G., Helene, D., Gomes, D.M.S., & Thereza, M. 2008. Whey proteins solubility curves at several temperatures values. *Ciência e Natura*, 30(1): 17-25.
- Badan Pengawas Obat dan Makanan Republik Indonesia. 2021. *Peraturan Badan Pengawas Obat dan Makanan Nomor 26 Tahun 2021 tentang Informasi Nilai Gizi Pada Label Pangan Olahan*. Jakarta.
- Perdani, A.W., & Utama, Z. 2021. Korelasi kadar asam fitat dan protein terlarut tepung tempe kedelai lokal kuning (*Glycine max*) dan hitam (*Glycine soja*) selama fermentasi. *Prosiding Pendidikan Teknik Boga Busana*, 15 (1).
- Perez, N.S.V., Sotelo, G.R., Fernandez, J.Y., & Rodriguez, D.C.C. 2023. Role of thermal process on the physicochemical and rheological properties and antioxidant capacity of a new functional beverage based on coconut water and rice flour. *ACS OMEGA*, 8: 26938-26947.

- Pletnev, P., Osterman, I., Sergiev, P., Bogdanov, A., & Dontsova, I. 2015. Survival guide: *Escherichia coli* in the stationary phase. *Acta Naturae*, 7(4):22-33.
- Pontoh, J. Metode analisa dan komponen kimia dalam nira dan gula aren. *Prosiding Seminar Nasional Aren*, 26-27 September 2012, Balikpapan. P. 66-71.
- Pramanda, I.T., Saputro, M.N.B., Naidu, N.C., & Devanthi, P.V.P. 2023. Starter cultures inoculation procedure changes microbial community structure during low-salt moromi fermentation. *Food Research* 7, 1: 96-102.
- Pratiwi, R.F., Utami, R., & Nurhartadi, E. 2012. Pengaruh lama fermentasi moromi terhadap viskositas, kadar protein terlarut, aktivitas antioksidan, dan sensori kecap bungkil wijen putih sangrai dan non sangria. *Jurnal Teknologi Hasil Pertanian*, (2): 96-105.
- Prihanto, A.A., Timur, H.D.L., Jaziri, A.A., Nurdiani, R., & Pradarameswari, K.A. 2018. isolasi dan identifikasi bakteri endofit mangrove *Sonneratia alba* penghasil enzim gelatinase dari Pantai Sendang Biru, Malang, Jawa Timur. *Indonesian Journal of Halal*, 31-42.
- Pu, D., Shi, Y., Meng, R., Yong, Q., Shi, Z., Shao, D., Sun, B., & Zhang, Y. Decoding the different aroma-active compounds in soy sauce for cold dishes via a multiple sensory evaluation and instrumental analysis. *Foods*, 12: 1-15.
- Pusat Data dan Sistem Informasi Kementerian Perdagangan Republik Indonesia. 2024. *Realisasi Ekspor - Impor Gula Nira Kelapa (HS 17029051) dan Buah Lontar (HS 08119000) Indonesia Periode 2018 – 2024*. Jakarta.
- Pusat Data dan Sistem Informasi Pertanian, Sekretariat Jenderal Kementerian Pertanian. 2023. *Statistik Konsumsi Pangan Tahun 2023*. Jakarta.
- Purwoko, T., & Handajani, N.S. 2007. Kandungan protein kecap manis tanpa fermentasi moromi hasil fermentasi *Rhizopus oryzae* dan *R. oligosporus*. *Biodiversitas*, 8(2): 223-227.
- Rahayu, A., Rahayu, M.S., & Manik, S.E. 2020. Peran berbagai sumber N terhadap pertumbuhan dan produksi berbagai varietas tanaman kacang tanah (*Arachis hypogaea* L.). *AGRILAND Jurnal Ilmu Pertanian*, 8(1): 89-93.
- Rahmadi, A. 2018. *Bakteri Asam Laktat dan Mandai Cempedak*. Mulawarman University Press. Samarinda
- Rajesh, M.K., Muralikrishna, K.S., Nair, S.S., Kumar, B.K., Subrahmanya, T.M., Sonu, K.P., Subaharan, K., Sweta, H., Prasad, T.S.K., Chandran, N., Karunasagar, I., Hebbar, K.B., & Karun, A. 2020. Facile coconut inflorescence sap mediated synthesis of silver nanoparticles and its diverse

- antimicrobial and cytotoxic properties. *Materials Science & Engineering C*, 111: 1-11.
- Rizaldi, L.H., Mikhratunnisa, Rinjani, F.U., & Amrullah, S. Pengaruh waktu fermentasi terhadap kadar bioetanol dari nira batang tebu (*Saccharum officinarum*). *JURNAL Agrotek Ummat*, 1-8.
- Robinson, T.P., Aboaba, O.O., Kaloti, A., Ocio, M.J., Baranyi, J., & Mackey, M.B. 2001. The effect of inoculum size on the lag phase of *Listeria monocytogenes*. *International Journal of Food Microbiology*, 70:163-173.
- Roling, W.F.M., & Verseveld, H.W.V. 1996. Characterization of *Tetragenococcus halophila* populations in Indonesian soy mash (kecap) fermentation. *Applied and Environmental Microbiology*, 62(4): 1203-1207.
- Rosida, D.F., Wijaya, C.H., Apriyantono, A., & Zakaria, F.R. 2013. Karakteristik moromi dan kecap manis serta kajian aktivitas antioksidannya. *E-Journal UPN "Veteran" Jatim (Universitas Pembangunan Nasional)*.
- Rumenser, D.C., Langi, T.M., & Koapaha, T. 2021. Karakteristik kimia dan organoleptik snack bar berbasis tepung ampas kelapa (*Cocos nucifera* L.) dan tepung kacang hijau (*Vigna radiata*). *Sam Ratulangi Journal of Food Research*, 1(1): 27-34.
- Runyon, J.R., Sunilkumar, B.A., Nilsson, L., Rascon, A., & Bergenstahl, B. 2015. The effect of heat treatment on the soluble protein content of oats. *Journal of Cereal Science*, 65: 119-124.
- Sabatino, A.D., Biagi, F., Giuffrida, P., & Corazza, G.R. 2013. The Spectrum of gluten-related disorders. *Curr Pediatr Rep*, 1: 182-188.
- Salmazo, G.C., Filho, R.G.D.M., Filho, R.G.D.M., Robazza, W.S., Schmidt, f.C., & Longhi, D.A. 2023. Modeling the growth dependence of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* as a function of temperature and pH. *Brazilian Journal of Microbiology*, 54: 323-334.
- Saputra, M.R., & Irsyad, H. 2022. Klasifikasi tingkat kemanisan alpukat berdasarkan fitur hue saturation value (HSV) dengan menggunakan support vector machine (SVM). *Jurnal Algoritme*, 2(2): 113-119.
- Saripah, Aini, A.F., Manfaati, R., & Hariyadi, T. 2021. Pengaruh suhu lingkungan dan waktu fermentasi biji kopi arabika terhadap kadar kafein, etanol, dan pH. *Prosiding The 12th Industrial Research Workshop and National Seminar*, 4-5 Agustus, Bandung.

- Satoh, M., Nomi, Y., Yamada, S., Takenaka, M., Ono, H., & Murata, M. 2011. Identification of 2,4-Dihydroxy-2,5-dimethyl-3(2H)-thiophenone as a low-molecular-weight yellow pigment in soy sauce. *Biosci. Biotechnol. Biochem.*, 75(7): 1240-1244.
- Setiani, B., Yuniarta, Zubaidah, E., & Wardani, A.K. 2024. Investigation of the physicochemical properties and its correlation during koji-moromi fermentation stage of production soy sauce naturally brewed in Central Java, Indonesia. *IJASEIT*, 14(2): 768-776.
- Sharma, A., & Meghwal, M. 2021. An update on uses, benefits and potential application of neera. *Journal of Nutrition and Food Precessing*, 4(8): 1-18.
- Shigemura, N., Shirosaki, S., Sanematsu, K., Yoshida, R., & Ninomiya, Y. 2009. Genetic and molecular basis of individual differences in human umami taste perception. *PLoS ONE*, 4(8): 1-9.
- Singracha, P., Niamsiri, N., Visessanguan, W., Lertsiri, S., & Assavaning, A. 2017. Application of lactic acid bacteria and yeasts as starter cultures for reduced-salt soy sauce (moromi) fermentation. *LWT – Food Science and Technology*, 78: 181-188.
- Sudarmadji, S. 1997. *Prosedur Analisa untuk Bahan Makanan dan Pertanian*. Yogyakarta: Liberty.
- Suharyono, A.S., & Kurniadi, M. 2010. Pengaruh konsentrasi starter streptococcus thermophillus dan lama fermentasi terhadap karakteristik minuman laktat dari bengkuang (*Pachyrrhizus erosus*). *Jurnal Teknologi Hasil Pertanian*, I(1): 51-58.
- Sumarto, Hariyadi, P., & Purnomo, E.H. 2014. Kajian proses perumusan standar dan peraturan keamanan pangan di Indonesia. *PANGAN*, 23(2): 108-119.
- Suri, M., Hasannah, C.S., Rahmatunnisa, A., Malani, S., Lestari, R.N., 2024. Pengolahan ampas tahu sebagai bahan baku pembuatan kecap dengan proses fermentasi menggunakan *Aspergillus wentii*. *Bioma: Jurnal Biologi Makassar*, 9(1): 76-86.
- Syifaa, A.S., Jinap, S., Sanny, M., & Khatib, A. 2016. Chemical profiling of different types of soy sauce and the relationship with its sensory attributes. *Journal of Food Quality*, 39: 714-725.
- Tang, T., Zhang, M., & bhandari, B. 2023. Effects of novel preparation technology on flavor of vegetable-soy sauce compound condiment. *Foods*, 12: 1-17.

- Thongsanit, J., Tanasupawat, S., Keeratipibul, S., & Jatikavanich, S. 2002. Characterization and identification of *Tetragenococcus halophilus* and *Tetragenococcus muriaticus* strains from fish sauce (nam-pla). *Japanese Journal of Lactic Acid Bacteria*, 13(1): 46-52.
- Villar, M., Holgado, A.P.D.R., Sanchez, J.J., Trucco, R.E., & Oliver, G. 1985. Isolation and characterization of *Pediococcus halophilus* from salted anchovies (*Engraulis anchoita*). *Applied and Environmental Microbiology*, 49(3): 664-666.
- Wang, L., Jiang, H., Wang, J., Qu, W., Xia, S., Xue, C.H., & Wen, Y. 2025. Effect of nutritional enhancement of fermentation bacteria on the flavor substances during the rapid fermentation of umami condiment. *Food Chemistry*, 497: 1-48.
- Wang, M., Kuang, S., Wang, X., Kang, D., Mao, D., Qian, G., Cai, X., Tan, M., Liu, F., & Zhang, Y. 2021. Transport of amino acids in soy sauce desalination process by electrodialysis. *Membranes*, 11(408): 1-15.
- Wei, Y., Yan, Z., Liu, M., Chen, D., Chen, X., & Li, X. 2022. Metabolic characteristics of intracellular trehalose enrichment in salt-tolerant *Zygosaccharomyces rouxii*. *Front. Microbiol.*, 13: 1-12.
- Wen, F., Zeng, C., Yang, Y., Xu, T., Wang, H., & Wang S.T. 2023. Sensory attributes and functional properties of maillard reaction products derived from the crassostrea gigas (*Ostrea rivularis* gould) enzymatic hydrolysate and xylose system. *Heliyon*, 9(4774): 1-13.
- Widiantara, T., Hasnelly, & Deviana, R.L. 2018. Pembuatan kecap asin koro pedang (*Canavalia ensiformis* L.) yang dipengaruhi perbandingan tempe koro pedang dengan tempe ampas tahu dan konsentrasi larutan garam. *Pasundan Food Technology Journal*, 5(3): 170-179.
- Wisnu, F.B., Rahayoe, S., Wijaya, R., Telaumbanua, M., & Haryanto, A. 2021. Mathematical model of physical properties change of coconut sap in the vacuum evaporator. *Jurnal Teknik Pertanian Lampung*, 10(2): 252-263.
- Wongthahan, P., Sae-Eaw, A., & Prinyawiwatkul, W. 2020. Sensory lexicon and relationships among brown colour, saltiness perception and sensory liking evaluated by regular users and culinary chefs: A case of soy sauces. *International Journal of Food Science and Technology*, 55: 2841-2850.
- Wu, T.Y., Kan, M.S., Siow, L.F., & Palniandy, L.K. 2010. Effect of temperature on moromi fermentation of soy sauce with intermittent aeration. *African Journal of Biotechnology*, 9(5): 702-706.

- Yan, Z., Xiao, X., Wei, Y., Cai, D.B., Chen, X., & Li, X. 2024. High glucose is a stimulation signal of the salt-tolerant yeast *Zygosaccharomyces rouxii* on thermoadaptive growth. *J. Fungi*, 10: 1-17.
- Yuan, H., Sun, Q., Wang, L., Fu, Z., Zhou, T., Ma, J., Liu, X., Fan, G., & Teng, C. 2024. Optimization of high-density fermentation conditions for *Saccharomycopsis fibuligera* Y1402 through response surface analysis. *Foods*, 13(1546): 1-17.
- Yuliatun, S., Wicaksono, P.P.B., & Ariyantoro, A.R. 2023. Analisa indeks glikemik sari tebu alami, nira serbuk, dan gula kristal putih dengan metode in vivo dan metode in vitro. *Indonesian Sugar Research Journal*, 3(2): 86-95.
- Zahidah, H.L., Widodo, F., Phothisoot, T., Kongpichitchoke, T., & Lo, D. 2025. Effect of sodium chloride and potassium chloride concentration on physicochemical, volatile aroma, and sensory characteristics of tempeh-based soy sauce. *ISoFST*, 1-7.
- Zhang, Y., & Chen, Q. 2020. Improving measurement of reducing sugar content in carbonated beverages using Fehling's reagent. *Journal of Emerging Investigators*, 20: 1-6.
- Zhao, G., Feng, Y., Hadiatullah, H., Zheng, F., & Yao, Y. 2021. Chemical characteristics of three kinds of Japanese soy sauce based on electronic senses and GC-MS analyses. *Front. Microbiol.*, 11(579808): 1-10.
- Zhu, L., He, S., Lu, Y., Gan, J., Tao, N., Wang, X., Jiang, Z., hong, Y., & Xu, C. 2022. Metabolomics mechanism of traditional soy sauce associated with fermentation time. *Food science and Human Wellness*, 11: 297-304.