

DAFTAR PUSTAKA

- Adams, Z., Ehrling, J. & Edwards, R., 2019. The regulatory role of shikimate in plant phenylalanine metabolism. *Journal of Theoretical Biology*, Vol. 462, pp. 158-170.
- Alam, M. et al., 2022. Therapeutic implications of caffeic acid in cancer and neurological diseases. *Frontiers in Oncology*, Vol. 12, p. 860508.
- Ali, et al., 2022. A comparative study for nutritional and phytochemical profiling of Coffea arabica from different origins and their antioxidant potential and molecular docking. *Molecules*, Vol. 27 (16), p. 5126.
- Allen, T., 2022. Whole Grains as an Antioxidant and its Health Benefits. *Journal of Oxidants and Antioxidants in Medical Science*, Vol. 11 (5), pp. 1-2.
- Al-mamari, H. H., 2021. *Phenolic Compounds: Classification, Chemistry, and Updated Techniques of Analysis and Synthesis*. s.l.:Intech.
- Alves, G. et al., 2016. The Revisitde Levels of Free and Bound Phenolics in Rice: Effects of The Extraction Procedure. *Food Chemistry*, Vol. 208, pp. 116-123.
- Alzoubi, K., Halboup, A., Alomari, M. & Khabaour, O., 2019. The Neuroprotective Effect of Vitamin E on Waterpipe Tobacco Smoking-Induced Memory Impairment: The Antioxidative Role. *Life Science*, Vol. 222, pp. 46-52.
- Amin, K. M., Rahman, D. E. A., Allam, H. A. & El-Zoheiry, H. H., 2021. Design and synthesis of novel coumarin derivatives as potential acetylcholinesterase inhibitors for alzheimer's disease. *Bioorganic Chemistry*, Vol. 110, p. 104792.
- Amir, H. et al., 2019. Determination of Important Phenolic Compounds in Pakistani Brown Rice Varieties in. *Progress in Chemical and Biochemical Research*, Vol. 2 (3), pp. 134-142.
- Annunziata, F. et al., 2020. An overview of coumarin as a versatile and readily accesible scaffold with broad-rangin biological activities. *International Journal Molecular Sciences*, Vol. 21 (13), p. 4618.
- Asworo, R. & Widwastuti, H., 2023. Pengaruh Ukuran Serbuk Simplisia dan Waktu Maserasi terhadap Aktivitas Antioksidan Ekstrak Kulit Sirsak. *Indonesian Journal of Pharmaceutical Education*, Vol. 3 (2), pp. 256-263.
- Bahera, P. K., Devi, S. & Mittal, N., 2023. Therapeutic potential of gallic acid in obesity: Considerable shift!. *Obesity Medicine*, Vol. 37.
- Basith, A., Arumingtyas, E. & Widodo, 2021. Genetic Variation Analysis of Four Local Varieties of Indonesian Black Rice (*Oryza sativa* L.) Based on Partially

- rbcl cpDNA gene sequence. *Journal of Experimental Life Science*, Vol. 11 (1), pp. 1-5.
- Basith, A., Noer, S. & Faizah, M., 2023. Variasi Tingkat Kandungan Antosianin pada Empat Varietas Lokal Padi Beras Hitam Indonesia. *Jurnal Pertanian*, Vol. 14 (1), pp. 1-7.
- Batista, R., 2014. Uses and potential applications of ferulic acid. In: *Ferulic acid: antioxidant properties, uses, and potential health benefits*. Bryce Warren ed. New York, USA: Nova Science Publishers, Inc., pp. 39-70.
- Beaulieu, J. C., Boue, S. M. & Guofo, P., 2022. Health-promoting germinated rice and value-added foods: a comprehensive and systematic review of germination effects on brown rice. *Critical Reviews in Food Science and Nutrition*, Vol. 63 (33).
- Beaulieu, J. C., Reed, S., Obando-Ulloa, J. M. & McClung, A. M., 2020. Green processing protocol for germinating and wet milling brown rice for beverage formulations: Sprouting, milling and gelatinization effects. *Food Science & Nutrition*.
- Bhat, N. A., Wani, I. A. & Sultan, N., 2022. Effect of Gamma-irradiation on the Physicochemical, Functional, and Antioxidant Properties of Unpigmented Brown Whole Rice Flour. *Journal of Food Science and Technology International*, Vol. 29 (3).
- Bhavadharini, B., Mohan, V. & Dehghan, M., 2020. White Rice Intake and Incident Diabetes: a Study of 132,373 Participants in 21 Countries. *Diabetes Care*, Vol. 43, pp. 2643-2650.
- Bhuia, M. S. et al., 2023. Neurobiological effects of gallic acid: current perspectives. *Chinese Medicine*, Vol. 18 (27).
- Birla, D. S. et al., 2017. Progress and Challenges in Improving The Nutritional Quality of Rice (*Oryza sativa* L.): Critical Reviews. *Food Science and Nutrition*, Vol. 57, pp. 2455-2481.
- Bolarinwa, I., Lim, P. & Kharidah, M., 2019. Quality of gluten-free cookies from germinated brown rice flour. *Food Research*, Vol. 3 (3), pp. 199-207.
- BPS, 2013. *Pedoman Pencahan dan Pengawasan Survei Volume Penjualan Eceran Beras*, Jakarta: Badan Pusat Statistik.
- BPS, 2022. *Perkembangan Luas Panen dan Produksi Padi di Indonesia Tahun 2022*, Jakarta: Badan Pusat Statistik.

- Burlando, B. & Cornara, L., 2014. Therapeutic Properties of Rice Constituents and Derivative (*Oryza sativa*): A Review Update. *Trends in Food Science & Technology*, Vol. 40 (1), pp. 82-98.
- Butnariu, M. & Sarac, I., 2019. Functional Food. *International Journal of Nutrition*, Vol. 3 (3), p. 7.
- Caceres, P. et al., 2017. Enhancement of Biologically Active Compounds in Germinated Brown Rice and The Effect of Sun-drying. *Journal of Cereal Science*, Vol. 73, pp. 1-9.
- Caceres, P., Villaluenga, C., Amigo, L. & Frias, J., 2014. Maximising the Phytochemical Content and Antioxidant Activity of Ecuadorian Brown Rice Sprouts Through Optimal Germination Conditions. *Food Chemistry*, Vol. 152, pp. 407-414.
- Callcott, E., Santhakumar, A., Luo, J. & Blanchard, C., 2018. Therapeutic Potential of Rice-Derived Polyphenols on Obesity-Related Oxidative Stress and Inflammation. *Journal of Applied Biomedicine*, Vol. 16, pp. 255-262.
- Chandra, S. et al., 2014. Assessment of total phenolic and flavonoid content, antioxidant properties, and yield of aeroponically and conventionally grown leafy vegetables and fruit crops: a comparative study. *Evid Base Complement Alternat Medical*.
- Charoenthaikij, P. et al., 2009. Germination Conditions Affect Physicochemical Properties of Germinated Brown Rice Flour. *Journal of Food Chemistry*, Vol. 74 (9).
- Chen, H. H. et al., 2016. An Improved Process for High Nutrition of Germinated Brown Rice Production: Low-Pressure Plasma. *Journal of Food Chemistry*, Vol. 191, pp. 120-127.
- Chen, X. et al., 2022. Investigation of flavonoid components and their associated antioxidant capacity in different pigmented rice varieties. *Food Research International*, Vol. 161.
- Chinma, C. et al., 2023. Impact of Germination on Techno-Functional Properties, Nutritional Composition, and Health-Promoting Compounds of Brown Rice and Its Products: A Review. *Journal of Food Science*, Vol. 89 (1), pp. 8-32.
- Chinma, C. et al., 2015. Effect of Germination on the Physicochemical and Antioxidant Characteristic of Rice Flour from Three Rice Varieties from Nigeria. *Food Chemistry*, Vol. 185, pp. 454-458.
- Cho, D.-H. & Lim, S.-T., 2016. Germinated Brown Rice and Its Biofunctional Compounds. *Food Chemistry*, Vol. 196, pp. 259-271.

- Chuan-ying, R. et al., 2023. Germinated brown rice relieves hyperlipidemia by alleviating gut microbiota dysbiosis. *Journal of Integrative Agriculture*, Vol. 22 (3), pp. 945-957.
- Chu, C. et al., 2020. Dynamics of antioxidant activities, metabolites, phenolic acids, flavonoids, and phenolic biosynthetic genes in germinating Chinese wild rice (*Zizania latifolia*). *Food Chemistry*, Vol. 318.
- Chung, S. I., Lo, L. M. & Kang, M. Y., 2016. Effect of Germination on The Antioxidant Capacity of Pigmented Rice (*Oryza sativa* L. cv. Superjami and Superhongmi). *Journal of Food Science and Technology Research*, Vol. 22 (3), pp. 387-394.
- Coswosck, K. H. C. et al., 2020. Impact of alternative sanitizers on the physicochemical quality, chlorophyll content and bioactive compounds of fresh vegetables. *Food Science and Technology*, pp. 1-7.
- Dash, S. & Podh, K., 2019. Nutritional Properties and Health Benefits of Black Rice: A Riview. *Journal of Emerging Technologies and Innovative Research*, Vol. 6 (6), pp. 154-159.
- Dejkriengkraikul, P., Semmarath, W. & Mapoung, S., 2019. Anthocyanins and proanthocyanidins in natural pigmented rice and their bioactivities. In: *Phytochemicals in human health*. s.l.:IntechOpen, pp. 1-24.
- Deng, G.-F. et al., 2013. Phenolic Compounds and Bioactivities of Pigmented Rice. *Food Science and Nutrition*, Vol. 53 (3), pp. 296-306.
- Ding, C. et al., 2019. Distribution and quantitative analysis of phenolic compounds in fractions of Japonica and Indica rice. *Food Chemistry*, Vol. 274, pp. 384-391.
- Dini, U. K. et al., 2024. Germinated IR-64 brown rice improves hyperglycemia in diabetic rats. *Nutrire*, Vol. 49 (49), Issue <https://doi.org/10.1186/s41110-024-00291-6>.
- Dwiningsih, Y. & Alkahtani, J., 2023. Potential of Pigmented Rice Variety Cempo Ireng in Rice Breeding Program for Improving Food Sustainability. *Journal of Biomedical Research & Environmental Sciences*, Vol. 4 (3), pp. 426-433.
- Eed, A. & Burgoyne, A., 2015. Tissue Culture of *Simmondsia chinensis* (Link) Schneider Banat's. *Journal of Biotechnology*, Vol. 6 (11), pp. 45-53.
- FAO, 2022. The State of Food and Agriculture. In: *Laveraging Automation in Agriculture for Transforming Agrifood Systems*. United Nations: Food and Agriculture Organization, pp. 1-182.

- Fargašová, A., 2023. A test battery approach for ecotoxicological evaluation of disinfectants prepared on the basis on sodium hypochlorite. *Folia Oecologica*, Vol. 50 (2), pp. 165-173.
- Frank, T., Reichardt, B., Shu, Q. & Engel, K. H., 2012. Metabolite Profiling of Colored Rice (*Oryza sativa* L.) Grains. *Journal of Cereal Science*, Vol. 55 (2), pp. 112-119.
- Gehan, I., Ahmed, O. M., Abbas, N. & Fateh, M. E., 2018. Evaluation of the anti-diabetic effects of epicatechin and/or gallic acid in STZ/NA- induced diabetic Wister rats. *Research Journal of Applied Biotechnology*, Vol. 4 (1), pp. 87-104.
- Gomez-Lopez, V. M., Medina-Martinez, A. M., Gil, M. I. & Allende, A., 2013. Generation of trihalomethanes with chlorine-based sanitizers and impact on microbial, nutritional and sensory quality of baby spinach. *Postharvest Biology and Technology*, Vol. 85 (20), pp. 210-217.
- Gunathunga, C. et al., 2024. Bioactive compounds and digestible starch variability of rice, maize, green gram, and soy grains with different levels of germination. *International Journal of Food Science & Technology*, Vol. 59 (12), pp. 9273-9286.
- Guofo, P. & Trindade, H., 2016. Factors influencing antioxidant compounds in rice. *Critical Reviews in Food Science and Nutrition*, Vol. 57 (5), pp. 893-922.
- Guven, M. et al., 2015. Neuroprotective effect of p-coumaric acid in rat model of embolic cerebral ischemia. *Iran Journal Basic Medical Sciences*, Vol. 18 (4), pp. 356-363.
- Han, A., Inn, J., Mauromoustakos, A. & Wang, Y., 2016. Effects of Parboiling on Milling, Physicochemical, and Textural Properties of Medium and Long-Grain Germinated Brown Rice. *Cereal Chemistry*, Vol. 93, pp. 47-52.
- Hanifa, A. P., Millner, J., McGill, C. & Sjahril, R., 2020. *Total Anthocyanin, Flavonoid, and Phenolic Content of Pigmented Rice Landraces from South Sulawesi*. s.l., IOP Publishing Conf. Series: Earth and Environmental Science, 484.
- Hasehmzaei, M. et al., 2017. Anticancer and apoptosis-inducing effects of quercetin in vitro and in vivo. *Oncology Reports*, Vol. 38 (2), pp. 819-828.
- Hayat, A. et al., 2015. HPLC Determination of Gamma Aminobutirat Acid (GABA) and Some Biogenic Amines (BAs) in Controlled, Germinated, and Fermented Brown Rice by Pre-Column Derivatization. *Journal of Cereal Science*, Vol. 64, pp. 56-62.

- Hazra, A. & Das, S., 2024. The molecular and metabolic events behind different germination stages of rice seeds: A metabolomics perspective. *JSFA Reports*, Vol. 4 (3), pp. 118-134.
- Huang, Y.-P. & Lai, H.-M., 2016. Bioactive Compounds and Antioxidative Activity of Colored Rice Bran. *Journal of Food and Drug Analysis*, Vol. 24, pp. 564-574.
- Immawati, D., Purwanti, S. & Prajitno, 2013. Daya Simpan Benih Kedelai Hitam (Glycine max L. Merrill) Hasil Tumpang Sari dengan Sorghum Manis (Sorghum bicolor L. Moench). *Journal of Vegetalika*, Vol. 2 (4), pp. 25-34.
- Indriarsih, S., Astuti, M. & Kanoni, S., 2017. Fatty Acid Composition and Physiochemical Properties in Germinated Black Rice. *Indonesian Food and Nutrition Progress*, Vol. 14 (1), pp. 29-36.
- Ingole, A. S. et al., 2021. A review of the pharmacological characteristics of vanillic acid. *Journal of Drug Delivery and Therapeutics*, Vol. 11 (2-s), pp. 200-204.
- Istianti, A. & Triasih, D., 2021. Respon Pertumbuhan dan Hasil Padi Hitam (Oryza sativa L.) Lokal Banyuwangi terhadap Aplikasi Beberapa Jenis Pupuk Kandang. *Journal of Applied Agricultural Sciences*, Vol. 5 (1), pp. 25-33.
- Jang, W. Y., Kim, M.-Y. & Cho, J. Y., 2022. Antioxidant, anti-inflammatory, anti-menopausal, and anti-cancer effects of lignans and their metabolites. *International Journal Molecular Sciences*, Vol. 23 (24), p. 15482.
- Jiang, Y. et al., 2023. Bergapten ameliorates combined allergic rhinitis and asthma syndrome after PM2.5 exposure by balancing Treg/Th17 expression and suppressing STAT3 and MAPK activation in a mouse model. *Biomedicine & Pharmacotherapy*, Vol. 164.
- Jung-Hwan, N., 2019. Impact of germination period on bioactive compounds and vitamin contents in quinoa, amaranth and brown rice. *International Journal of Engineering & Technology*, Vol. 8.
- Kaosa-ard, T. & Songsermpong, S., 2012. Influence of Germination Time on The GABA Content and Physical Properties of Germinated Brown Rice. *Asian Journal of Food and Agro-Industry*, Vol. 5 (4), pp. 270-283.
- Karunarathna, S. et al., 2023. Development and validation of a method based on liquid chromatography-mass spectrometry for comprehensive profiling of phenolic compounds in rice. *Microchemical Journal*, Vol. 193.
- Kashyap, D. et al., 2017. Kaempferol - a dietary anticancer molecule with multiple mechanisms of action: recent trends and advancements. *J Funct Foods*, Vol. 30, pp. 203-219.

- Kaur, H. & Gill, B. S., 2020. Comparative evaluation of physicochemical, nutritional and molecular interactions of flours from different cereals as affected by germination duration. *Journal of Food Measurement and Characterization*, Vol. 14, pp. 1147-1157.
- Kementan RI, 2015. *Modul Pemberdayaan dalam Upaya Khusus Peningkatan Produksi Padi, Jagung, dan Kedelai Tahun 2015*, Jakarta: Kementerian Pertanian Republik Indonesia.
- Kementerian Pertanian, 2018. *Deskripsi Varietas Padi*, Jakarta: Kementerian Pertanian Republik Indonesia.
- Khalua, R. K., Tewari, S. & Mondal, R., 2019. Nutritional Comparison Between Brown Rice and White Rice. *The Pharma Innovation Journal*, Vol. 8 (6), pp. 997-998.
- Khatun, L., Brahma, R. & Ray, S., 2023. Nutritional and functional potentials of germinated rice: A systematic review. *Food Science and Applied Biotechnology*, Vol. 6 (2).
- Kholifah, E., Nurazizah, D. & Noviyanto, F., 2023. Antioxidant Activity and Vitamin C Concentration Analysis of Gandaria (*Bouae macrophylla* Griff) Ethanol Extract Using Spectrophotometry UV Vis. *Journal of Fundamental and Applied Pharmaceutical Science*, Vol. 3 (2), pp. 54-63.
- Kim, G. et al., 2014. Combined Mass Spectrofotometry-Based Metabolite Profiling of Different Pigmented Rice (*Oryza sativa* L.) Seeds and Correlation with Antioxidant Activities. *Molecules*, Vol. 19 (10), pp. 15673-15686.
- Kim, H. Y. et al., 2012. Chemical and Functional Components in Defferent Parts of Rough Rice (*Oryza sativa* L.) Before and After Germination. *Food Chemistry*, Vol. 134 (1), pp. 288-293.
- Kim, H. Y., Lee, S. H., Hwang, I.-G. & Kim, T.-M., 2012. Antioxidant activity and anticancer effects of rough rice (*Oryza sativa* L.) by germination periods. *Journal of the Korean Society of Food Science and Nutrition*, Vol. 41 (1), pp. 14-19.
- Krisbianto, O., Astuti, M. & Marsono, Y., 2016. Antihyperglycemic Effect and Antioxidants Properties of Black Rice (*Oryza sativa* L. indica) Cereal and Anthocyanin Extract on Health and Histopathology of Hyperglycemic Rats. *Pakistan Journal of Nutrition*, Vol. 15 (7), pp. 702-707.
- Kristamtini, Taryono, Basunanda, P. & Murti, R., 2014. Keragaman Genetik Kultivar Padi Beras Hitam Lokal Berdasarkan Penanda Mikrosatelit. *Journal AgroBiogen*, Vol. 10 (2), pp. 69-76.

- Kumar, D. et al., 2020. Pigmented Rice: A Miracle Food for Modern-Day World. *Food and Scientific Reports*, Vol. 1 (10), pp. 83-86.
- Kumar, N. & Goel, N., 2019. Phenolic acids: Natural versatile molecules with promising therapeutic applications. *Biotechnology Reports*, Vol. 24.
- Kunnam, J. et al., 2023. Stability of Phenols, Antioxidant Capacity and Grain Yield of Six Rice Genotypes. *Plants*, Vol. 12 (5), p. 2787.
- Kushwaha, U., 2016. Research, History, and Development. In: *Black Rice*. 1 ed. Switzerland: Springer Cham, pp. XX, 192.
- Kusumawati, R., Palupi, N. S. & Budijanto, S., 2021. Aktivitas Antioksidan Makaroni Beras Hitam dan Kacang-Kacangan Berpigmen Metode Cold Extrusion. *Agritech*, Vol. 42 (3), pp. 195-205.
- Lam, C.-S. et al., 2023. Dihydro-resveratrol attenuates oxidative stress, adipogenesis, and insulin resistance in vitro models and high-fat diet induced mouse model via AMPK activation. *Nutrients*, Vol. 15 (13), p. 3006.
- Latiff, N. A. et al., 2017. Evaluation of Antioxidant Activity and Total Polyphenols Content on Upland Rice. *Journal of Natural Product and Plant Resource*, Vol. 7 (2), pp. 1-6.
- Lee, W. N. & Huang, C. H., 2019. Formation of disinfection byproducts in wash water and lettuce by washing with sodium hypochlorite and peracetic acid sanitizers. *Food Chemistry*, Vol. 10 (1).
- Lee, Y. R. et al., 2019. Antioxidative and antidiabetic effect of germinated rough rice extract in 3T3-L1 adipocytes and C57BLKS/J-db/db mice. *Food & Nutrition Research*, Vol. 63, p. 3603.
- Liu, L. et al., 2015. Effect of degree of milling on phenolic profiles and cellular antioxidant activity of whole brown rice. *Food Chemistry*, Vol. 185, pp. 318-325.
- Liu, Q., Li, X., Ouyang, X. & Chen, D., 2018. Dual effects of fluconidation of pyrogallol-type phytophenol antioxidant: a comparison between scutellarein and scutellarin. *Molecules*, Vol. 23 (12), p. 3225.
- Liu, R., He, X., Shi, J. & Nirasawa, S., 2013. The Effect of Electrolyzed Water on Decontamination, Germination and γ -Aminobutyric Acid Accumulation of Brown Rice. *Food Control*, Vol. 33 (1), pp. 1-5.
- Li, X. et al., 2022. Use of ferulic acid in the management of diabetes mellitus and its complications. *Molecules*, Vol. 27 (18), p. 6010.

- Li, Z. et al., 2022. Geographical Origin Diefferentiation of Rice by LC-MS-Based Non-Targeted Metabolomics. *Journal of Foods*, Vol. 11 (21).
- Loan, L. & Thuy, N., 2020. Optimization of Germination Process of "Cam" Brown Rice by Response Surface Methodology and Evaluation of Germinated Rice Quality. *Food Research*, Vol. 4 (2), pp. 459-467.
- Mackill, D. J. & Khush, G. S., 2018. IR-64: A High Quality and High Yielding Mega Variety. *Journal of Rice*, Vol. 11 (18).
- Maeda, H. et al., 2014. Genetic Dissection of Black Grain Rice by The Development of a Near Isogenic Line. *Breed Science*, Vol. 64, pp. 134-141.
- Maghfiroh, A. L., 2019. *Perbedaan nilai estimasi indeks glikemik dan beban glikemik nasi hitam dan nasi kecambah beras hitam varietas Cempo Ireng secara in vitro*, Malang, Indonesia: Repository BKG (Brawijaya Knowledge Garden).
- Maheswari, N. & Sharma, M. C., 2023. Anticancer properties of some selected plant phenolic compounds: future leads for therapeutic development. *Journal of Herbal Medicine*, Vol. 42.
- Maisont, S. & Narkruga, W., 2010. The Effect of Germination on GABA Content, Chemical Composition, Total Phenolics Content and Antioxidant Capacity of Thai Waxy Paddy Rice. *Kasetsart Journal Natural Science*, Vol. 44 (5), pp. 912-923.
- Maligan, J. M., Lestary, M. & Wani, Y. A., 2017. Perbedaan Aktivitas Antioksidan Kecambah Beras Coklat (*Oryza sativa* L.) Berdasarkan Lama Proses Elisitasi dan Waktu Perkecambahan. *Indonesian Journal of Human Nutrition*, Vol. 4 (2), pp. 108-116.
- Mandal, S. et al., 2023. Effect of maceration, ultrasound, and microwave-assisted method of extraction on antioxidant activity and phenolic profile of free, esterified, and bound phenolics of Tulaipanji rice. *International Journal of Food Engineering*, Vol..
- Mantiri, S. A. et al., 2024. In vivo evaluation of germinated IR-64 brown rice dietary administration on the lipid blood profiles of rats with hypercholesterolemia. *Nutrire*, Vol. 49 (44), Issue <https://doi.org/10.1186/s41110-024-00287-2>.
- Manwan, S. W. et al., 2023. *Grain color measurement and nutrient content of local pigmented rice from South Sulawesi*. s.l., Purpose-Led Publishing.
- Margha, Z. B. et al., 2020. The effects of gallic acid and metformin on male reproductive dysfunction in diabetic mice induced by methylglyoxal: An

experimental study. *International Journal of Reproductive BioMedicine*, Vol. 19 (8).

- Mathew, S. & Abraham, T. E., 2014. Ferulic acid: an antioxidant found naturally in plant cell walls and feruloyl esterases involved in its release and their applications. *Crit Rev Biotechnol*, Vol. 24 (3), pp. 59-83.
- Matsuda, T., 2019. Rice flour: A promising food material for nutrition and global health. *Journal Nutrition Science Vitaminol*, Vol. 65, pp. 13-17.
- Mattei, J. et al., 2015. Reducing the Global Burden of Type 2 Diabetes by Improving the Quality of Staple Foods: The Global Nutrition and Epidemiologic Transition Initiative. *Globalization and Health*, Vol. 11 (23).
- Mattioli, R., Francioso, A., Mosca, L. & Silva, P., 2020. Anthocyanins: A Comprehensive Review of Their Chemical Properties and Health Effects on Cardiovascular and Neurodegenerative Diseases. *Molecules*, Vol. 25 (17), p. 3809.
- Mau, J.-l., Lee, C.-c., Chen, P. Y. & Lin, S. D., 2017. Physicochemical, Antioxidant, and Sensory Characteristics of Chiffon Cake Prepared with Black Rice as Replacement for Wheat Flour. *LWT-Food Science and Technology*, Vol. 75, pp. 434-439.
- Ma, Y., Zhang, S., Rong, L. & Wu, Z., 2022. Polyphenol Composition and Antioxidant Activity of Japonica Rice Cultivars and Intake Status. *Foods*, Vol. 11 (23), p. 3788.
- Ma, Z.-Q., Yi, C.-P., Wu, N.-N. & Tan, B., 2022. Steaming retains more phenolics, dietary fiber, and antioxidant activities than cooking for rice with different milling processes. *Cereal Chemistry*, Vol. 99 (3), pp. 664-679.
- Mirshekar, M. A. et al., 2018. Neuroprotective effects of gallic acid in a rat model of traumatic brain injury: behavioral, electrophysiological, and molecular studies. *Iran J Basic Med Sci*, Vol. 10, pp. 1056-1063.
- Misgiyarta & Winarti, C., 2023. Pengendalian Kontaminan Mikroba pada Sayuran Segar dengan Formula Sanitizer dari Natrium Hipoklorit dan Asam Asetat. *Jurnal Teknotan*, Vol. 17 (1), p. 43.
- Mohan, B., Malleshi, N. & Koseki, T., 2010. Physico-Chemical Characteristics and Non-Starch Polysaccharide Contents of Indica and Japonica Brown Rice and Their Malts. *Food Science and Technology*, Vol. 43 (5), pp. 784-791.
- Moon, J. H. et al., 2012. A NAA Collaborative Study in White Rice Performed in Seven Asian Countries. *Journal Radioanal Nucl Chem*, pp. 217-221.

- Morales, V. F. et al., 2023. Therapeutic effects of coumarins with different substitution patterns. *Molecules*, Vol. 28 (5), p. 2413.
- Munarko, H., Sitanggang, A. B., Kusnandar, F. & Budijanto, S., 2019. Kecambah Beras Pecah Kulit: Proses Produksi dan Karakteristiknya. *Jurnal Pangan*, Vol. 28 (3), pp. 239-252.
- Munarko, H., Sitanggang, A. B., Kusnandar, F. & Budijanto, S., 2020. Phytochemical, fatty acid and proximal composition of six selected Indonesian brown rice varieties. *Journal of Food*, Vol. 18 (01), pp. 336-343.
- Munarko, H., Sitanggang, A. B., Kusnandar, F. & Budijanto, S., 2021. Effect of different soaking and germination methods on bioactive compounds of germinated brown rice. *International Journal of Food Science and Technology*, pp. 1-9.
- Munarko, H., Sitanggang, A. B., Kusnandar, F. & Budijanto, S., 2022. Germination of Five Indonesian Brown Rice: Evaluation of Antioxidant, Bioactive Compounds, Fatty Acids and Pasting Properties. *Food Science and Technology*, Vol. 42, pp. 1-8.
- Nascimento, L. et al., 2022. Rice Germination and Its Impact on Technological and Nutritional Properties: A Review. *Rice Science*, Vol. 29 (3), pp. 201-215.
- Nasser, M. I. et al., 2020. A comprehensive review on schisandrin B and its biological properties. *Oxidative Medicine and Cellular Longevity*.
- Nath, A., Vatai, G. & Banvolgy, S., 2023. Functional foods and bioactive compounds through environmentally benign emerging processes. *Processes*, Vol. 11, p. 1182.
- Neuenschwander, M., Ballon, A. & Weber, K. S., 2019. Role of Diet in Type 2 Diabetes Incidence: Umbrella Review of Meta-Analyses of Prospective Observational Studies. *BMJ*, Vol. 366, p. 2368.
- Nile, S. H., Keum, Y. S., Saini, R. K. & Patel, R. V., 2017. Characterization of total phenolics, antioxidant and antiplatelet activity of unpolished and polished rice varieties. *Journal of Food Measurement and Characterization*, Vol. 11, Issue <https://doi.org/10.1007/s11694-016-9390-4>, pp. 236-244.
- Nonogaki, H., Bassel, G. & Bewley, D., 2010. Germination - Still a Mystery. *Journal of Plant Science*, Vol. 179, pp. 574-581.
- Ohm, J.-B., Lee, C. & Cho, K., 2016. Germinated Wheat: Phytochemical Composition and Mixing Characteristics. *Cereal Chemistry*, Vol. 93 (6), pp. 612-617.

- Ohtsubo, K., Suzuki, K., Yasui, Y. & Kasumi, T., 2005. Bio-functional Components in The Processed Pre-Germinated Brown Rice by a Twin-screw Extruder. *Journal of Food Composition and Analysis*, Vol. 18 (4), pp. 303-316.
- Oikawa, T. et al., 2015. The Birth of Black Rice Gene and Its Local Spread by Introgression. *The Plant Cell*, Vol. 27 (9), pp. 2401-2414.
- Oliveira, M. d. et al., 2011. Changes in Lipid, Fatty Acids, and Phospholipids Composition of Whole Rice Bran After Solid-State Fungal Fermentation. *Bioresource Technology*, Vol. 102 (17), pp. 8335-8338.
- Oliveira, M. E. et al., 2023. Role of short germination and milling on physical properties, amino acid, and metabolomic profiles of high amylose rice fractions. *Food Research International*, Vol. 174 (1).
- Orsolic, N. et al., 2021. Efficacy of caffeic acid on diabetes and its complications in the mouse. *Molecules*, Vol. 26 (11), p. 3262.
- Pandey, P., Khan, F., Qari, H. A. & Oves, M., 2021. Rutin (bioflavonoid) as cell signaling pathway modulator: prospects in treatment and chemoprevention. *Pharmaceuticals*, Vol. 14 (11), p. 1069.
- Perez-Tenero, C. et al., 2017. Bioavailability of the ferulic acid-derived phenolic compounds of a rice bran enzymatic extract and their activity against superoxide production. *Food & Function*, Vol. 8 (6), pp. 2165-2174.
- Permatasari, D. I., Sutjiati, E. & Sulistyowati, E., 2023. Effect of Brown Rice Intervention on BMI and Waist Circumference in Patients with Type 2 Diabetic Mellitusq. *Indonesian Journal of Human Nutrition*, Vol. 10 (1).
- Pinkaew, H., Wang, Y.-J. & Naivikul, O., 2017. Impact of Pre-Germination on Amylopectin Molecular Structures, Crystallinity, and Thermal Properties of Pre-Germinated Brown Rice Starches. *Journal of Cereal Science*, Vol. 73 , pp. 151-157.
- Polycarpou, E. et al., 2013. Resveratrol 3-O-D-glucoronide and resveratrol 4'-O-D-glucoronide inhibiti colon cancer cell growth: evidence for a role of A3 adenosine receptors, cyclin D1 depletion, and G1 cell cycle arrest. *Molecular Nutrition & Food Research*, Vol. 57 (10), pp. 1708-1717.
- Poojary, M. et al., 2017. Influence of Innovative Processing on Gamma Aminobutirat (GABA) Contents in Plant Food Materials. *Food Science and Food Safety*, Vol. 16 (5), pp. 895-905.
- Pramai, P. et al., 2018. Metabolite Profiling, Antioxidant, and α -glucosidase Inhibitory Activities of Germinated Rice: Nuclear-Magnetic-Resonance-

- Based Metabolomics Study. *Journal of Food and Drug Analysis*, Vol. 26, pp. 47-57.
- Pramai, P. et al., 2019. Chemical profiles of three varieties of germinated rice based on LC-MS and their antioxidant activity. *Food and Applied Bioscience Journal*, Vol. 7 (2), pp. 11-32.
- Pratiwi, R., Amalia, A. R., Tunjung, W. A. S. & Rumiati, 2019. Active Fractions of Black Rice Bran cv Cempo Ireng Inducing Apoptosis and S-phase Cell Cycle Arrest in T47D Breast Cancer Cells. *Journal of Mathematical and Fundamental Sciences*, Vol. 51 (1), pp. 47-59.
- Pulungan, D., Haryati, R. & Lahay, 2014. Pengaruh Periode Panen terhadap Viabilitas Benih Rosela (*Hibiscus sabdariffa* L.). *Agroekoteknologi*, Vol. 2 (1), pp. 878-883.
- Qin, Y. et al., 2023. Conversion of endogenous phenolic acid in brown rice by bioextrusion of mesophilic α -amylase. *Food Bioscience*, Vol. 53.
- Qi, Q. et al., 2023. Anthocyanins and Proanthocyanidins: Chemical Structures, Food Sources, Bioactivities, and Product Development. *Food Reviews International*, Vol. 39 (7).
- Rachmawati, E. et al., 2023. Metabolite profiling, hypolipidemic, and anti-atherosclerosis activity of mixed vegetable fermentation extract. *Saudi Pharmaceutical Journal*, Vol. 31 (5), pp. 639-654.
- Rahaman, M. M. et al., 2023. Natural antioxidants from some fruits, seeds, food, natural products, and associated health benefits: an update. *Food Science & Nutrition*, Vol. 11, Issue DOI: 10.1002/fsn3.3217, pp. 1657-1670.
- Rahayu, A., Krestini, E. H. & Azmi, C., 2017. Pengaruh Berbagai Konsentrasi NaOCl terhadap Mutu Benih Cabai Besar Varietas Ciko. *Prosiding Seminar Nasional*.
- Rahim, M. et al., 2022. Photochemistry, Functional Properties, Food Applications, and Health Prospective of Black Rice. *Journal of Chemistry*.
- Ravichanthiran, K. et al., 2018. Phytochemical Profile of Brown Rice and Its Nutrigenomic Implications. *Antioxidants (Basel)*, Vol. 7 (6), p. 71.
- Rohmah, S. & Sulistyorini, L., 2017. Gambaran Konsumsi Udang Berklorin terhadap Keluhan Kesehatan Gastrointestinal Pekerja Sub Kontrak Perusahaan X. *Jurnal Kesehatan Lingkungan*, Vol. 9 (1), pp. 57-65.
- Samyori, D., Das, A. B. & Deka, S. C., 2017. Pigmented Rice a Potential Source of Bioactive Compounds: A Review. *International Journal of Food Science & Technology*, Vol. 52 (5).

- Santos, M. C. et al., 2021. Metabolomics of pigmented rice coproducts applying conventional or deep eutectic extraction solvents reveal a potential antioxidant source for human nutrition. *Metabolites*, Vol. 11 (2), p. 110.
- Sapna, I., Kamaljit, M., Priya, R. & Jayadeep, P. A., 2019. Milling and thermal treatment induced changes on phenolic components and antioxidant activities of pigmented rice flours. *Journal of Food Science and Technology*, Vol. 56, pp. 273-280.
- Saprudin, D., Palupi, C. A. & Rohaeti, E., 2019. Evaluasi Pemberian Unsur Hara Besi pada Kandungan Asam Amino dan Mineral dalam Biji Jagung. *Jurnal Kimia Riset*, Vol. 4 (1), pp. 49-61.
- Saqqa, G. A., 2021. Somefunctional foods and benefits of their bioactive components. *Journal of the Saudi Society for Food and Nutrition (JSSFN)*, Vol 14 (1), pp. 1-11.
- Seczyk, L., Sugier, D., Świeca, M. & Gawlik-Dziki, U., 2021. The effect of in vitro digestion, food matrix, and hydrothermal treatment on the potential bioaccessibility of selected phenolic compounds. *Food Chemistry*, Vol. 344.
- Sedeek, K. et al., 2023. Multi-omics Resources for Targeted Agronomic Improvement of Pigmented Rice. *Nature Food*, Vol. 4, pp. 366-371.
- Sekjend Pusdatin, 2018. *Perpustakaan Emil Salim Kementerian Lingkungan Hidup dan Kehutanan*. [Online]
Available at: <https://bit.ly/perpustakaanemilsalimKLHK>
[Accessed 25 September 2024].
- Septianingrum, E., Liyanan & Kusbiantoro, B., 2016. Rice Glycemic Index: The Factors Affecting and The Impact on Human Health. *Jurnal Kesehatan*, Vol. 1 (1), pp. 1-9.
- Setyaningsih, W., Saputro, I. E., Carrera, C. & Palma, M., 2019. Optimisation of An Ultrasound-Assisted Extraction Method fot The Simultaneous Determination of Phenolics in Rice Grains. *Food Chemistry*, Vol. 228, pp. 221-227.
- Setyaningsih, W., Saputro, I. ., Palma , M. & Barraso, C., 2016. Profile of Individual Phenolic Compound in Rice (*Oryza sativa*) grains during cooking processes. *AIP Conference Proceedings*, 1755.
- Shao, Y. & Bao, J., 2015. Polyphenols in Whole Rice Grain: Genetic Diversity and Health Benefits. *Food Chemistry*, Vol. 180, pp. 86-97.
- Shao, Y. et al., 2014. Identification and quantification of phenolic acids and anthocyanins as antioxidants in bran, embryo, and endosperm of white, red,

- and black rice kernels (*Oryza sativa* L.). *Journal of Cereal Science*, Vol. 59 (2), pp. 211-218.
- Shi, Y. et al., 2021. Anti-oxidation and anti-inflammatory potency evaluation of ferulic acid derivatives obtained through virtual screening. *International Journal Molecular Sciences*, Vol. 22 (21), p. 11305.
- Sinha, K. et al., 2020. Mobilization of Storage Lipid Reserve and Expression Analysis of Lipase and Lipoxygenase Genes in Rice (*Oryza sativa* var. Pusa Basmati 1) Bran During Germination. *Phytochemistry*, Vol. 180.
- Siregar, T. & Kristanti, C., 2019. Mikroenkapsulasi Senyawa Fenolik Ekstrak Daun Kenikir (*Cosmos caudatus* K.). *Jurnal Aplikasi Teknologi Pangan*, Vol. 8 (1).
- Sirisoontaraalak, P., Nakornpanom, N. N., Koakietdumrongkul, K. & Panumaswiwath, C., 2015. Development of Quick Cooking Germinated Brown Rice with Convenient Preparation and Containing Health Benefits. *Food Science and Technology*, Vol. 61 (1), pp. 138-144.
- Sitanggang, A. B. et al., 2021. Increased γ -Aminobutyric Acid Content of Germinated Brown Rice Produced in Membrane Reactor. *Food Technology & Biotechnology*, Vol. 59 (3), pp. 295-305.
- Sompong, R., Ehn, S., Martin, L. & Berghofer, E., 2011. Physicochemical and Antioxidative Properties of Red and Black Rice Varieties from Thailand, China, and Sri Lanka. *Food Chemistry*, Vol. 124 (1), pp. 132-140.
- Song, J. et al., 2020. New progress in the pharmacology of protocatechuic acid: A compound ingested in daily foods and herbs frequently and heavily. *Pharmacological Research*, Vol. 161.
- Srisang, N., Varayanond, W., Soponronnarit, S. & Prachayawarakorn, S., 2011. Effects of Heating Media and Operating Conditions on Drying Kinetics and Quality of Germinated Brown Rice. *Journal of Food Engineering*, Vol. 107 (3), pp. 385-392.
- Suharti, T., Bramasto, N. & Yuniarti, 2014. Pengaruh Teknik Pengendalian Penyakit Benih terhadap Viabilitas Benih Tembesu (*Frageae fragans* Roxb.). *Jurnal Hutan Tropis*, Vol. 1 (1), pp. 60-64.
- Suryanti, V. et al., 2020. Antioxidant activity and compound constituents of gamma-irradiated black rice (*Oryza sativa* L.) var. Cempo Ireng indigenous of Indonesia. *Biodiversitas*, Vol. 21 (9), Issue DOI: 10.13057/biodiv/d210935, pp. 4205-4212.
- Sybron, A. et al., 2019. Effects of Ripening Stage on The Content and Antioxidant Capacities of Phenolic Compounds of Arils, Seeds and Husks of Ackee Fruit *Blighia sapida* Koenig. *Scientia Horticulture*, Vol. 256.

- Tang, Y., Cia, W. & Xu, B., 2015. From Rice Bag to Table: Fate of Phenolic Chemical Compositions and Antioxidant Activities in Waxy and Non-Waxy Black Rice During Home Cooking. *Food Chemistry*, Vol. 191, pp. 81-90.
- Taufik, M., Lioe, H. N. & Yuliana, N. D., 2016. Evaluation of Major Fatty Acids Determination in Palm Oil by Gas Chromatography-Flame Ionization Detection. *Jurnal Agritech*, Vol 36 (3), pp. 308-316.
- Teeranachaideekul, V. et al., 2018. Characterization, biological activities and safety evaluation of different varieties of Thai pigmented rice extracts for cosmetic applications. *Pharmacy Science Asia*, Vol. 45 (3), pp. 140-153.
- Thanuja, B. & Parimalavalli, 2018. Role of Black Rice in Health and Diseases. *International Journal of Health Science and Research*, Vol. 8 (2), pp. 241-248.
- Thapa, S. B. et al., 2023. Production of resveratrol glucosides and its cosmetic activities. *Cosmetics*, Vol. 10 (4), p. 98.
- Thomas, R., Bhat, R. & Kuang, Y., 2015. Composition of Amino Acids, Fatty Acids, Minerals, and Dietary Fiber in Some of Local and Import Rice Varieties of Malaysia. *International Food Research Journal*, Vol. 22 (3), pp. 1148-1155.
- Thong-asa, W. et al., 2024. Neuroprotective effect of gallic acid in mice with rotenone-induced neurodegeneration. *Experimental Animals*, Vol. 73 (3), pp. 259-269.
- Ti, H. et al., 2014. Dynamic changes in the free and bound phenolic compounds and antioxidant activity of brown rice at different germination stages. *Food Chemistry*, Vol. 161, pp. 337-344.
- Tiozon, R. J. et al., 2023. Metabolomics and machine learning technique revealed that germination enhances the multi-nutritional properties of pigmented rice. *Communications Biology*, Vol. 6.
- Tuntipopipat, S. et al., 2015. A Bioaccessible Fraction of Parboiled Germinated Brown Rice Exhibits a Higher Anti-inflammatory Activity than Brown Rice. *Food and Function*, Vol. 6 (5), pp. 1480-1488.
- Ukpong, E. & Onyeka, E., 2019. Nutritional and Health Properties of Germinated Brown Rice: A Review. *Nigerian Food Journal*, Vol. 37 (1), p. 92.
- Ukpong, E., Onyeka, E. & Oladeji, B., 2023. Bioactive Compounds, Nutrients and Pasting Properties of Parboiled Milled Rice, Brown Rice, and Germinated Brown Rice of Selected Cultivars and The Effects of Germination Durations. *Food Chemistry Advances*, Vol. 2.

- Ukpong, E. S., Okpalanma, E. F. & Ezegebe, C. C., 2024. Effect of milling and temperature of germination on nutrients, bioactive compounds and pasting properties of FARO 44, FARO 57 and NERICA-8 brown rice cultivars. *Food Chemistry Advances*, Vol. 4.
- Varalakshmi, T. N. & Chitra, V., 2023. In-vivo evaluation of nephroprotective activity of naringenin against ADPKD and MDCK-derived cysts. *International Journal of Pharmaceutical Quality Assurance*, Vol. 14 (3), pp. 776-785.
- Verma, D. K. & Srivastav, P. P., 2020. Bioactive Compounds of Rice (*Oryza sativa* L.) : Review on Paradigm and its Potential Benefit in Human Health. *Journal Trends in Food Science & Technology*, Vol. 97, pp. 355-365.
- Vuolo, M. M., Lima, V. S. & Junior, M. R., 2019. Chapter 2 - Phenolic compounds: structure, classification, and antioxidant Power. In: M. R. S. Campos, ed. *Bioactive Compounds*. s.l.:Woodhead Publishing, pp. 33-50.
- Wang, W. et al., 2018. Genomic Variation in 3,010 Diverse Accessions of Asian Cultivated Rice. *Nature*, Vol. 557, pp. 43-49.
- Wang, Y. et al., 2016. Variation in Polyphenols, Tocols, Gamma Aminobutyric Acid and Antioxidant Properties in Whole Grain Rice (*Oryza sativa* L.) as Affected by Different Germination Time. *Cereal Chemistry*, Vol. 93 (3), pp. 268-274.
- Watchararparpaiboon, W., Laohakunjit, N. & Kerdchoechuen, O., 2010. An Improved Process for High Quality and Nutrition of Brown Rice Production. *Food Science Technology*, Vol. 16 (2), pp. 147-158.
- Wu, N.-n., Li, R., Li, Z.-J. & Tan, B., 2022. Effect of germination in the form of paddy rice and brown rice on their phytic acid, GABA, γ -oryzanol, phenolics, flavonoids and antioxidant capacity. *Food Research International*, Vol. 159.
- Wuryandani, S., Isomoyowati, D. & Suwondo, E., 2022. Developing an ingredient branding strategy applied to pigmented rice commodity. *AGRARIS: Journal of Agribusiness and Rural Development Research*, Vol. 8 (1), pp. 73-89.
- Wu, W., Qiu, J., Wang, A. & Li, Z., 2020. Impact of Whole Cereals and Processing on Type 2 Diabetes Mellitus: A Review. *Critical Review Food Science Nutrition*, Vol. 60, pp. 1447-1474.
- Wu, X., Guo, T., Luo, F. & Lin, Q., 2023. Brown Rice: A Missing Nutrient-Rich Health Food. *Food Science and Human Wellness*, Vol. 12 (5), pp. 1458-1470.
- Xie, M. et al., 2019. Whole Grain Consumption for the Prevention and Treatment of Breast Cancer. *Journal of Nutrients*, Vol. 11 (8), p. 1769.

- Xu, Y. et al., 2021. Gallic Acid and Diabetes Mellitus: Its Association with Oxidative Stress. *Molecules*, Vol. 26 (23), p. 7115.
- Xu, Z. et al., 2023. Kaempferol improves acute kidney injury via inhibition of macrophage infiltration in septic mice. *Bioscience Reports*, Vol. 43 (7).
- Yafang, S., Gan, Z. & Jinsong, B., 2011. Total Phenolic Content and Antioxidant Capacity Grains with Extremely Small Size. *African Journal of Agricultural Reseach*, Vol 6 (1).
- Yafang, S., Gan, Z. & Jinsong, B., 2020. Total Phenolic Content and Antioxidant Capacity of Rice Grains with Extremely Small Size. *African Journal of Agricultural Economics and Rural Development*, Vol. 8 (11), pp. 01-05.
- Yang, J. et al., 2020. Dynamic transcriptome and metabolome analyses of two types of rice during the seed germination and young seedling growth stages. *BMC Genomics*, Vol. 21 (603).
- Yang, M. et al., 2019. Metabolic Profile Analysis and Identification of Key Metabolites During Rice Seed Germination Under Low-Temperature Stress. *Plant Science*, Vol. 289.
- Yeni, Y., 2024. Investigation of the in vitro effect of vanillic acid on wound healing via FN1 and COL1 α 1 Genes. *Dicle Med J*, Vol. 51 (2), pp. 233-240.
- Yuenyongputtakal, W. & Itthi, T., 2012. Production of Germinated Red Jasmine Brown Rice and Its Physicochemical Properties. *International Food Research Journal*, Vol. 19 (4), pp. 1649-1654.
- Yu, J. et al., 2022. White Rice, Brown Rice, and The Risk of Type 2 Diabetes: A Systematic Review and Meta-Analysis. *Nutrition and Metabolism*, Vol. 12 (9).
- Yunanda, A. P., Fauzi, A. R. & Junaedi, A., 2013. Pertumbuhan dan Produksi Padi Varietas Jatiluhur dan IR-64 pada Sitem Budidaya Gogo dan Sawah. *Buletin Agrohorti*, Vol. 1 (4), p. 18.
- Zafar, S. & Jianlong, X., 2023. Recent Advances to Enhance Nutritional Quality of Rice. *Rice Science*, Vol. 30 (6), pp. 523-536.
- Zakaria, N. N. A. et al., 2020. Antioxidant and phytochemical content of commercial brown rice (Ecobrown) and white rice (Jasmine, Jati Super Special and Manggo Thai) for potential cosmetic rice powder raw materials. *Journal of Tropical Resource and Sustainable Science*, Vol. 8, pp. 46-50.
- Zaman, A. et al., 2023. Exploring pharmacological potentials of p-coumaric acid: a prospective phytochemical for drug discovery. *Bangladesh Pharmaceutical Journal*, Vol. 26 (2), pp. 185-194.

- Zarei, I. et al., 2018. Comparative rice bran metabolomics across diverse cultivars and functional rice gene-bran metabolite relationship. *Metabolites*, Vol. 8 (4), p. 63.
- Zhao, H. et al., 2023. Pharmacological effects of urolithin A and its role in muscle health and performance: current knowledge and prospects. *Nutrients*, Vol. 15 (20), p. 4441.
- Zhu, J. et al., 2024. Metabolomics Reveals Antioxidant Metabolites in Colored Rice Grains. *Metabolites*, Vol. 14 (2), p. 120.